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TECHNICAL REPORT

LUNSORT LIST

NASA CR-

147525

of Lunar Orbiter Data by LAC Area

(NASA-CR-147525) LUNSORT LIST OF LUNAR  
ORBITER DATA BY LAC AREA (Lockheed  
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JSC-10853



Abstract furnished by Author

LUNSORT List of Lunar Orbiter Data by LAC Area

by

S. HIXON

Lunar Orbiter (missions 1-5) photographic data is listed sequentially according to the numbered (1 to 147) LAC (Lunar Aeronautical Chart) areas by use of a computer program called LUNSORT. This listing, as well as a similar one from Apollo, would simplify the task of identifying images of a given Lunar area. Instructions and sample cases are included.

## FOREWORD

LUNSORT LISTING is a computer listing of imagery data acquired from Lunar Orbiters I through V, and is indexed by the USAF Lunar Aeronautical Charts (LAC) shown in figures 1 - 4. This listing was a planned outgrowth of GEMSORT, which lists all earth spacecraft imagery up to 1969 by approximate political boundaries. The listed photographic data includes values taken from Boeing's Lunar Orbiter tapes and presents them in the more compressed LUNSORT format. Two companion publications 640-TR-024 and 640-TR-025 are concerned with the computer program and data from Apollo (missions 8, 10, 11, 12, 13, and 14) and are titled respectively: "LUNSORT: A Computer Program for Separating Apollo Photographs by Area" and "LUNSORT LIST: Apollo 8, 10, 11, 12, 13, and 14 Photographic Data by LAC Area".

This document was prepared by Lockheed Electronics Company, Inc., IEC Aerospace Systems Division, under contract NAS 9-10950. This report was prepared by S. Hixon with C. C. devalcourt compiling the data. Acknowledgment is also made to Mrs. Shirley Cornelius for preparation of the graphic illustrations. Apparent data errors discovered in this listing may be reported to S. Hixon, CO9, NASA-JSC, Houston, Texas 77058. Although LUNSORT is capable of generating values listed (except swing angle) in this publication, the Boeing values were retained in all cases.



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## I. INTRODUCTION FOR QUICK USE

The computer printout in section II of this report is derived from a program documented in 640-TR-024 "LUNSORT: A Computer Program for separating Apollo Photographs by Area"; note that this report uses Lunar Orbiter data.

A typical user question might be: Can a list be obtained of all Lunar Orbiter photographs which contain the details of the Crater Theophilus? The approximate steps to an answer are below:

1. Examine figures 1 to 4 and note the LAC number and/or the quarter of a LAC of your point of interest. (LAC 78, the SE quarter for this case.)
2. Using the number in the upper left corner of each page of section II, thumb through the sequential numbers to "your" LAC, number 78.
3. Examine each third print-line for each photograph for the phrase:"S. E. PART OF LAC 78 ..." and note the mission and frame number of those photographs for your restricted list. Magazine numbers (1 & 2) are for the high and medium resolution , respectively.
4. Examine from your restricted list, the actual photographs to determine its usefulness to your purpose. Column titles in the printout apply to the first print line of each photograph and these values may help to further restrict your list, as well as the second line with defined values. Table I, a list of the LAC Areas by number, and Table II, which lists the first page in section II for that LAC area listing, are designed to aid users.
5. Photographs with the term "EASTERN PART OF LAC 78..." and "SOUTHERN PART OF LAC 78..." or just "LAC 78 THEOPHILUS..." might also be of interest.

At the top of each page, beginning that area LAC, there are special notes explaining symbols and abbreviations. Each LAC in the Table 1 list may be truncated on the right-hand end on any given third-print-line on photographs with 4 or more LAC's visible. Some other description phrases, other than LAC areas, are used to give the reader a better feel of that photograph. If there is a sixth area on the third-print-line of a given photograph, this may not be printed if the line is "filled up"; an example of this is on page 61 Lunar Orbiter 4 frame 116 in which the third-print-line does not have "LAC 28 ...".

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
LUNAR EARTH SIDE CHART

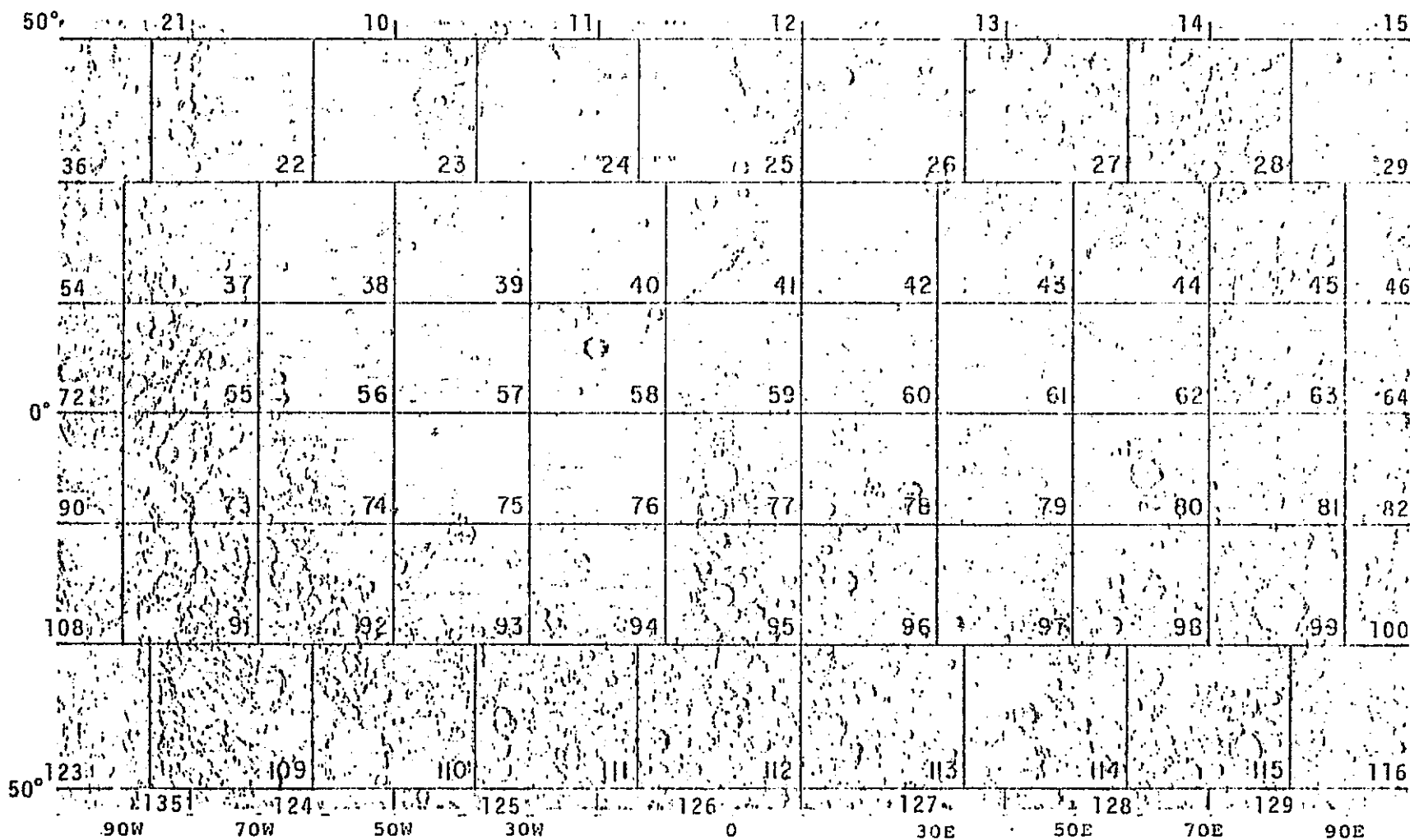


Figure 1. Lunar earthside chart.

I-2

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
LUNAR FAR SIDE CHART

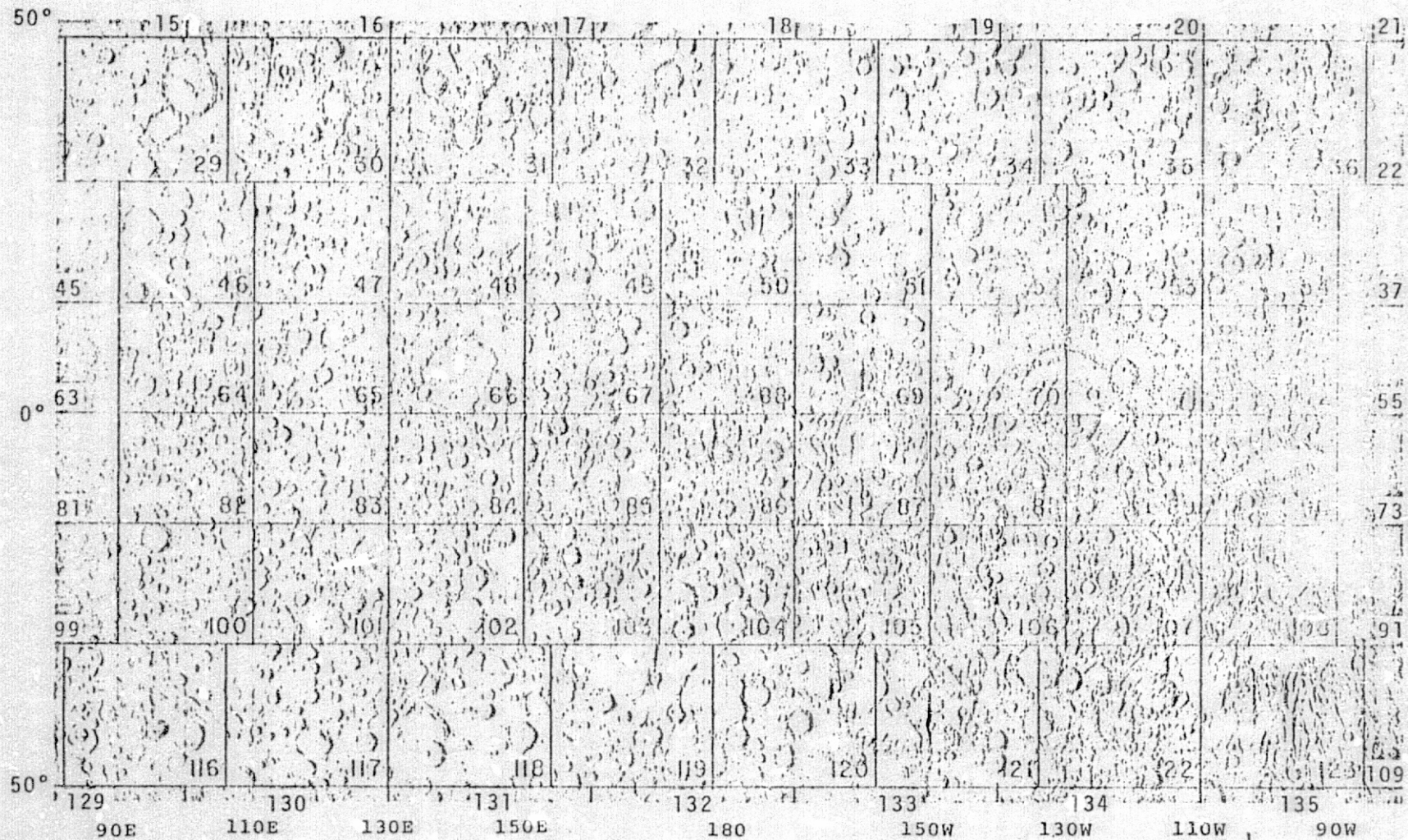


Figure 2. Lunar farside chart.

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ORIGINAL PAGE IS POOR

I-3



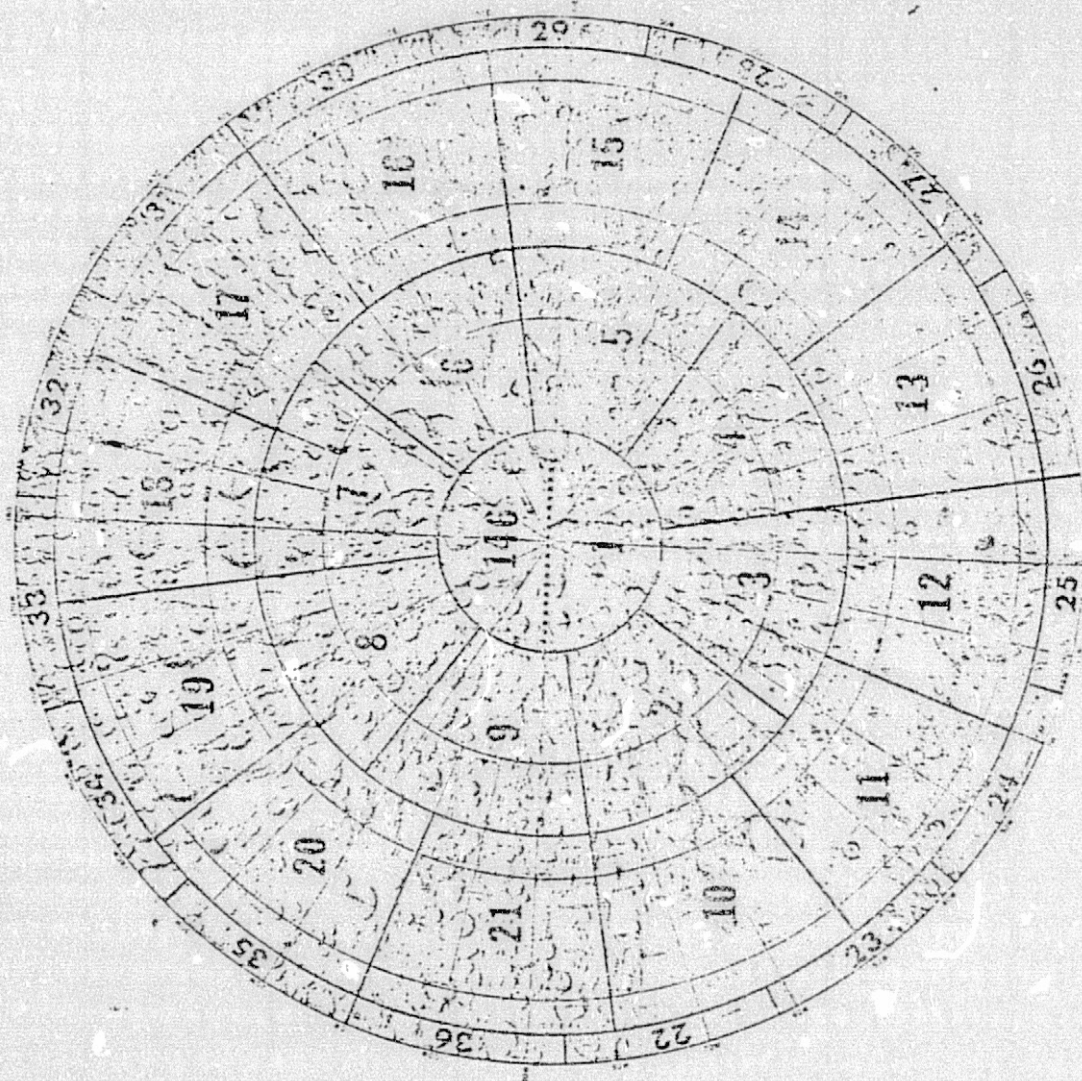


Figure 3. Lunar north pole chart.

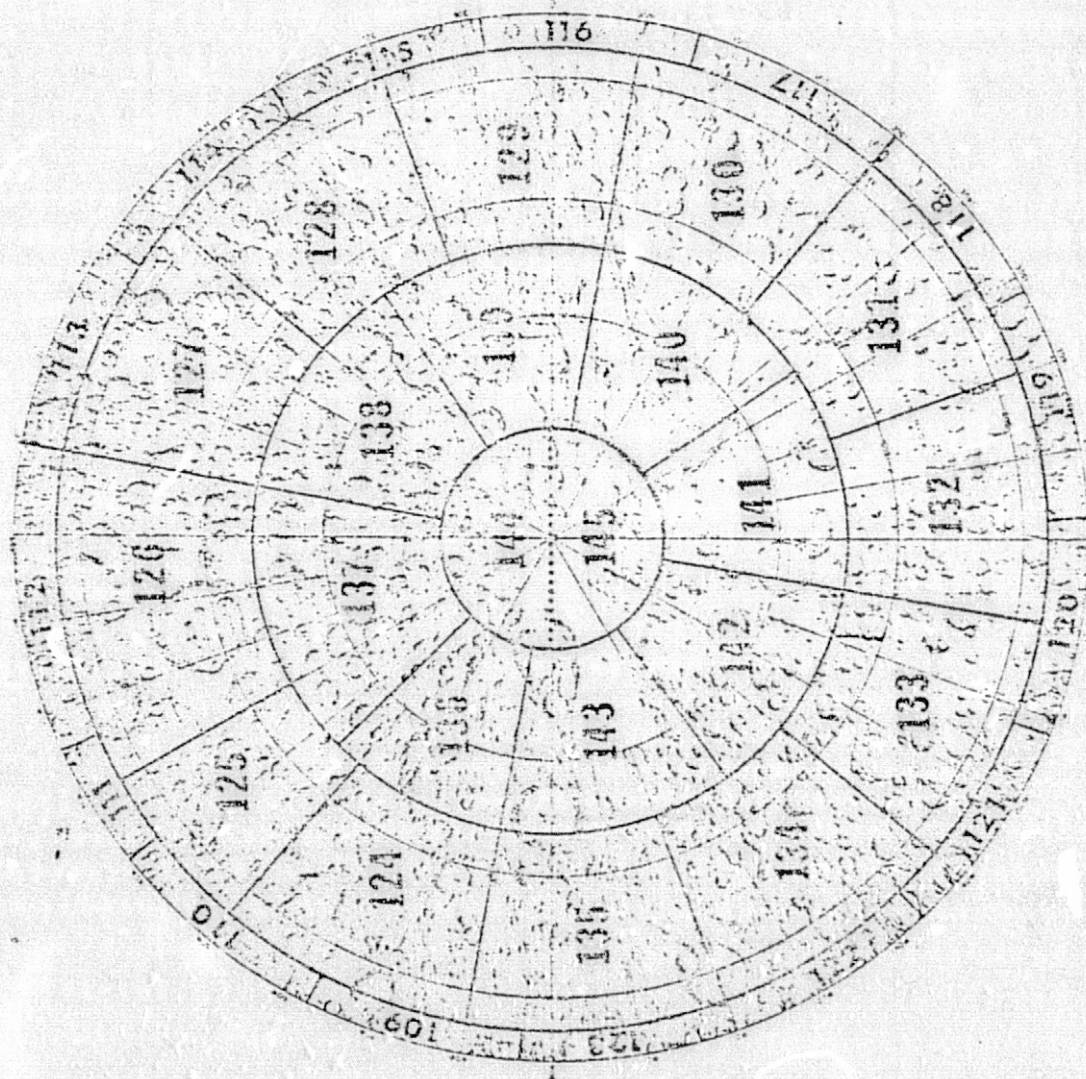


Figure 4. Lunar south pole chart.

Table 1. LAC Areas by Number

(Acronym LAC = Lunar Aeronautical Chart)

LAC #	LAC DESCRIPTION
1	LAC 1 N. POLE NEARSIDE BYRD, PEARY > 80 N
2	LAC 2 ANAXIMENES, PASCAL
3	LAC 3 PHILOLAUS, BARROW
4	LAC 4 METON, DESITTER
5	LAC 5 PETERMANN, HAYN
6	LAC 6
7	LAC 7 KARPINSKY
8	LAC 8 KIRKWOOD
9	LAC 9 CREMONA
10	LAC 10 BABBAGE, N. PROCELARH.
11	LAC 11 J. HERSCHEL, JURAS, BOUGUER
12	LAC 12 PLATO, ALPINE VAL.
13	LAC 13 ARISTOTE, M. FRIG.
14	LAC 14 ENDYMION, STRABO
15	LAC 15 M. HUMBOLDTIANUM
16	LAC 16
17	LAC 17
18	LAC 18 TIKHOV
19	LAC 19 CARNOT, ROWLAND
20	LAC 20 COULOMB
21	LAC 21 H. GERARD, BOOLE
22	LAC 22 SE. GERARD, BUNSEN, HARDING
23	LAC 23 RUMKER, SHARP
24	LAC 24 SINUS IRIDUM
25	LAC 25 CASSINI, ALPS MTS
26	LAC 26 EUDOXUS, BURG
27	LAC 27 GEMINUS, ATLAS
28	LAC 28 GAUSS, MESSALA, ZENO
29	LAC 29 BRUNO, FABRY
30	LAC 30 E. SZILARD WELLS
31	LAC 31 WIENER
32	LAC 32 HUTTON
33	LAC 33 SCHNELLER
34	LAC 34 FOWLER
35	LAC 35 LANDAU
36	LAC 36 RONTGEN LORENZ
37	LAC 37 STRUYE, DALTON
38	LAC 38 SELEUCUS, SCHROTER V.
39	LAC 39 ARISTARCHUS
40	LAC 40 TIMOCHARIS, LAMBERT
41	LAC 41 APENNINES, HAEMUS
42	LAC 42 M. SERENITY, DAWES
43	LAC 43 MACROBIUS, PROCLUS
44	LAC 44 CLEOMEDES, M. CRIS.
45	LAC 45 PLUTARCH, HAHN
46	LAC 46 JOLIOU MAXWELL
47	LAC 47 OLCOTT
48	LAC 48 N. M. MOSCOVIENSE
49	LAC 49 E. M. MOSCOVIENSE
50	LAC 50 MORSE
51	LAC 51 JACKSON
52	LAC 52 JOULE E. MACH

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ORIGINAL PAGE IS POOR



## LAC #

## LAC DESCRIPTION

53	LAC 53 OHM FERSMAN
54	LAC 54 BELB LAUE
55	LAC 55 VASCODEGAMMA, HEDIN
56	LAC 56 HEVELIUS, REINER
57	LAC 57 KEPLER, ENCKE
58	LAC 58 COPERNICUS, REINHOLD
59	LAC 59 M. VAPORUM, HYGINUS
60	LAC 60 J. CAESAR, SABINE, JANSEN
61	LAC 61 TARUNTIUS, LYELL
62	LAC 62 M. UNDAUM, S. CRISIUM
63	LAC 63 NEPER, SCHUBERT, N. SMYTHI
64	LAC 64 NE, SMYTHI, HERTZ
65	LAC 65 GUYOT KING
66	LAC 66 MENDELEEV
67	LAC 67 SPENCER
68	LAC 68 SHARONOV
69	LAC 69 ENGLEHARDT
70	LAC 70 N. W. HERTZSPRUNG, ARTEM
71	LAC 71 N. E. HERTZSPRUNG, GRIGG
72	LAC 72 ELVEY NOBEL
73	LAC 73 PICCIOLI, NE. ORIENTAL
74	LAC 74 GRIMALDI, BILLY
75	LAC 75 LETRONNE, FLAMSTED
76	LAC 76 RIPHAeus MT, FRAU MAURO
77	LAC 77 PTOLMAEUS, KLEIN
78	LAC 78 THEOPHILUS, KANT
79	LAC 79 COLOMBO, NE. M. NECTAR
80	LAC 80 LANGRENUS, M. FERT.
81	LAC 81 ANSGARIUS, W. M. SMYTHI
82	LAC 82 SE. M. SMYTHI, PASTEUR
83	LAC 83 LANGEHAK
84	LAC 84 DELLINGER
85	LAC 85 KEELER
86	LAC 86 DAEDALUS
87	LAC 87 KOROLEV, DOPPLER
88	LAC 88 S. W. HERTZSPRUNG, PASCHEN
89	LAC 89 S. E. HERTZSPRUNG, JOFFE
90	LAC 90 LOWELL
91	LAC 91 EICHSTADT, SE. ORIENTAL
92	LAC 92 BYRGIUS, DARWIN
93	LAC 93 M. HUMOR, GASSENDI
94	LAC 94 PITATUS, M. NUBIUM
95	LAC 95 PURBACH, ARZACHEL
96	LAC 96 ALTAI SCARP, GEBER
97	LAC 97 FRACASTORIUS, S. NECTAR
98	LAC 98 PETAVIUS, HOLDEN
99	LAC 99 HUMBOLT, GIBBS
100	LAC 100 CURIE
101	LAC 101 TSIOLKOVSKY
102	LAC 102 GAGARIN, E. TSIOLKOVSKY
103	LAC 103 PARACELSUS
104	LAC 104 AITKEN, ORLOV

LAC #	LAC DESCRIPTION
105	LAC 105 MOHOROVICIC
106	LAC 106 MARIOTTE
107	LAC 107 ELLERMAN
108	LAC 108 M.ORIEN(SW 1/3 Q)
109	LAC 109 PIAZZI,V.BOUVARD
110	LAC 110 SCHICKARD,LACROIX
111	LAC 111 WILHELM,ELGER,MEE
112	LAC 112 TYCHO,STOFER
113	LAC 113 MAUROLICUS,RAB,LEVI
114	LAC 114 RHEITA,JANSSEN
115	LAC 115 FURNERUS,OKEN
116	LAC 116 M.AUSTRALE,JENNER
117	LAC 117 VAN DER WAALS
118	LAC 118 JULES VERN,PAULI
119	LAC 119 THOMPSON,VON KARMAN
120	LAC 120 OPPENHEIMER
121	LAC 121 APOLLO
122	LAC 122 LANGMUIR STETSON
123	LAC 123 STEKLOV
124	LAC 124 PHOCYLIDES
125	LAC 125 SCHILLER,SEGNER
126	LAC 126 CLAVIUS,MAGINUS
127	LAC 127 HUMMEL,VLAQ
128	LAC 128 BIELA,WATT
129	LAC 129 M.AUSTRALE,LYOT
130	LAC 130 E.MAR AUSTRALE,PRIESTLY
131	LAC 131 PRANDTL PLANK
132	LAC 132 ABBE,HESS
133	LAC 133 LEMAITRE
134	LAC 134 BOLTZMANN
135	LAC 135 PINGRE N.HAUSEN
136	LAC 136 BAILLEY,KIRCHER
137	LAC 137 NEWTON,MORETUS
138	LAC 138 MANZINUS,SCHMBGER
139	LAC 139 HELMHOLZ,HALE
140	LAC 140 SCHRODINGER
141	LAC 141 RAYLEIGH
142	LAC 142 ZEEMAN
143	LAC 143 S.HAUSEN LEGENTIL
144	LAC 144 SCOTT,S.POLE NEARSIDE > 805
145	LAC 145 S.POLE FAR SIDE;AMUNDSEN >805
146	LAC 146 N.POLE FAR SIDE;NANSEN,#3 >80N
147	UNKNOWN LUNAR AREA

The listing of photographs of any LAC area are in mission order (ie. Lunar Orbiter 1, 2, 3, 4, and 5) and the data pertaining to each photograph is printed on three lines (see section II). The first line is the "basic data line" and the column titles apply to this line. The second line is "lunar support data line" which contains camera nadir, swing angle, phase angle, emission angle, camera radius (from the planet center), and sun azimuth; this line differs from the Appolo data line by the addition of swing angle which is defined as the angle between the principal plane, which includes the principal point, and the y-axis which parallels the long edge of orbiter frames. This angle is measured clockwise. The third line is the "description line" (made up from DATA-statement-lines from table 1, which is abstracted from subroutine NAMLUN). From this third line the user can determine several useful points concerning that particular photograph and his point, or area of interest:

1. If that photograph has imagery of only a portion of the LAC example on page I-1, the "description line" printout could read: "S. E. PART OF LAC 78 THEOPHILUS KANT" ; rest of the line is blank.
2. If other adjacent partial LAC's are in the image, these will be mentioned with the following restrictions:
  - a) If the "whole" eastern half of LAC 78 (or parts of the NE and SE quarters) were visible the "description line" might read in part: "EASTERN PART OF LAC 78 THEOPHILUS KANT" .
  - b) If the southern half (or parts of the SE and SW) were visible: "SOUTHERN PART OF LAC 78 THEOPHILUS KANT" could be read.
  - c) If the photograph had less than six LAC's visible and LAC 78 were one of these, then "LAC 78 ..." should be mentioned in the "description line". Very small scale views or all of the lunar disc would be mentioned as such in the "description line" and these could have 20 or more LAC's; hence many of these small scale views would not necessarily be listed in the LAC 78 list.
3. The LAC which contains the principal point of the photograph is usually mentioned first in the "description line"; high oblique photographs may be exceptions, as well as those taken from an altitude greater than 1000 nautical miles.
4. The user might wish to further limit his LAC 78 list by tilt angle, or other items of his choice after reviewing the support data. This could be done by inspection or by special computer submission.

Table 2

## LAC INDEX FOR COMPUTER PAGES

LAC	PAGE	LAC	PAGE	LAC	PAGE
1	1	49	103	98	308
2	6	50	104	99	311
3	8	51	105	100	313
4	10	52	106	101	315
5	12	53	107	102	317
6	14	54	108	103	318
7	15	55	109	104	319
8	16	56	111	105	320
9	17	57	115	106	322
10	19	58	126	107	324
11	21	59	140	108	325
12	23	60	158	109	327
13	26	61	175	110	329
14	29	62	190	111	331
15	31	63	193	112	334
16	33	64	197	113	337
17	35	65	200	114	339
18	36	66	201	115	342
19	38	67	203	116	344
20	39	68	204	117	346
21	42	69	205	118	347
22	44	70	207	119	348
23	46	71	208	120	349
24	49	72	209	121	350
25	52	73	212	122	351
26	55	74	214	123	352
27	58	75	217	124	354
28	60	76	231	125	356
29	62	77	245	126	358
30	64	78	258	127	360
31	66	79	265	128	362
32	67	80	274	129	365
33	68	81	277	130	369
34	69	82	281	131	370
35	70	83	283	132	371
36	72	84	284	133	372
37	74	85	285	134	373
38	76	86	286	135	374
39	79	87	288	136	375
40	84	88	290	137	377
41	87	89	291	138	379
42	91	90	292	139	381
43	94	91	293	140	383
44	96	92	295	141	385
45	98	93	297	142	386
46	100	94	300	143	387
47	101	95	302	144	388
48	102	96	304	145	392
		97	306	146	394

LAC 1 N.POLE NEAR SIDE BYRD, PEARY &gt;80 N

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. \$ = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ) , ORIO) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; 2P, 2B, 2S = ZEISS LENS(PLANAR, BIOGEN, SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10° AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. PHOTO OR LAT.	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GHT H SEC	N-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE. ANG. ANG. FWD. FR. LAP VERT % %
L 4 2	92	71.17N	32.23E	17	**	065357	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3457K 43212500	129	.6 12 -.90
CAN.NAD.= 71.92N 29.48E SWING= 306. PHASE= 79. EMIS.ANG.= 2. CAM.RAD.= 5196.2 KM. SUN AZH=127.4													
LAC 4 METON, DESIT ; LAC 7 KARPINSKY ; LAC 41 APENNINES, ; LAC 44 CLEONEDES, H. CRIS. & LAC 18 TIKHOV													
L 4 2	116	70.80N	4.49E	21	**	070041	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3397K 42462500	148	.6 12 -.90
CAN.NAD.= 71.88N 2.48E SWING= 326. PHASE= 80. EMIS.ANG.= 2. CAM.RAD.= 5136.2 KM. SUN AZH=124.1													
LAC 3 PHILOLAUS, B ; LAC 7 KARPINSKY ; LAC 41 APENNINES, ; LAC 1 N.POLE NEAR SIDE BYRD, PEARY >80 N & LAC 17													
L 4 1	425	70.09N	84.08E	9	**	064506	5-13-67	LUNAR ORB HI. 610MM B&W	-	NONE	3494K 5727869	188	.8 14 -.90
CAN.NAD.= 71.60N 84.75E SWING= 357. PHASE= 78. EMIS.ANG.= 2. CAM.RAD.= 5233.2 KM. SUN AZH=130.1													
DEGRADED NEGATIVE ; LAC 5 PETERMANN, ; LAC 6 ; LAC 15 M.HUMBOLTIANUM & LAC 1 N.POLE NEAR SIDE													
L 4 1	56	70.35N	68.44E	11	**	064639	5-14-67	LUNAR ORB HI. 610MM B&W	-	NONE	3495K 5729508	214	.8 13 -.90
CAN.NAD.= 71.63N 71.06E SWING= 25. PHASE= 78. EMIS.ANG.= 2. CAM.RAD.= 5234.2 KM. SUN AZH=126.8													
LAC 5 PETERMANN, ; LAC 4 METON, DESIT ; LAC 14 ENDYMION, S ; LAC 15 M.HUMBOLTIANUM & LAC 1 N.POLE NEAR SIDE													
L 4 1	68	70.93N	53.66E	13	**	064827	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	3488K 5718033	239	.7 12 -.90
CAN.NAD.= 71.63N 57.12E SWING= 50. PHASE= 78. EMIS.ANG.= 2. CAM.RAD.= 5227.2 KM. SUN AZH=124.4													
LAC 4 METON, DESIT ; LAC 5 PETERMANN, ; LAC 14 ENDYMION, S ; LAC 1 N.POLE NEAR SIDE BYRD, PEARY >80 N & LAC 146 N.POLE FAR SIDE													
L 4 2	745	40.70N	45.57E	14	**	181008	5-15-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2.0K 37125000	119	2.3 25 -.90
CAN.NAD.= 42.75N 41.06E SWING= 383. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4709.2 KM. SUN AZH=113.2													
DEGRADED NEGATIVE ; LAC 27 GEMINUS, AT ; W>1/2 MOON SPHERE ; LAC 146 N.POLE FAR SIDE INANSEN, N3 >80N & LAC 114 RHEITA, JANSS													
L 4 2	790	41.83N	39.05E	15	**	061131	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2964K 37050000	103	2.1 25 -.90
CAN.NAD.= 42.79N 34.33E SWING= 268. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4703.2 KM. SUN AZH=113.3													
LAC 27 GEMINUS, ATLAS ; W>1/2 MOON SPHERE ; LAC 1 N.POLE NEAR SIDE BY ; LAC 13 ARISTOTE., H. FRIG & LAC 78 THEOPHILUS													
L 4 1	80	70.45N	46.09E	15	**	065107	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	3479K 5703279	147	.8 13 -.90
CAN.NAD.= 71.87N 43.34E SWING= 323. PHASE= 79. EMIS.ANG.= 3. CAM.RAD.= 5218.2 KM. SUN AZH=128.9													
LAC 4 METON, DESIT ; LAC 5 PETERMANN, ; LAC 13 ARISTOTE., ; LAC 14 ENDYMION, STRABO & LAC 1 N.POLE NEAR SIDE													
L 4 2	91	42.03N	25.72E	17	**	061439	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2947K 36837500	100	2.1 24 -.90
CAN.NAD.= 42.80N 20.90E SWING= 265. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4886.2 KM. SUN AZH=112.5													
LAC 26 EUDOXUS, BURG ; W>1/2 MOON SPHERE ; LAC 1 N.POLE NEAR SIDE BYRD, PEARY >80 N & LAC 16													

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 ORIGINAL PAGE IS POOR

HIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE,	
SIUN	ROLL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	MAIN	LONG.		(ESTIMATED)			TYPE		M=N, HI	PT.	FR.	VERT	LAP		
										K*KM.						
L 4	1	92	71°16N	32°23E	17	***	065357	5-17-67 LUNAR	ORB H1, 610MM B&W	-	NONE	3457K	5667213	129	*6 12	-. 3
		CAM.NAD.=	71.72N	29.48E		SWING=	306.	PHASE=	79.	EMIS.ANG.=	2.	CAM.RAD.=	5196.2 KM.		SUN AZH=127.4	
		LAC 4	METON, DESIT			LAC 5	PETERMANN,			LAC 3	PHILOLAUS, B				LAC 13	ARISTOTE., M.FRIG
																LAC 1 N-POLE NEARSIDE
L 4	2	98	40°97N	18°53E	18	***	181626	5-17-67 LUNAR	ORB LO, F=80MM B&W	-	NONE	2938K	36725000	118	2.2 23	-.27
		CAM.NAD.=	42.81N	14.21E		SWING=	282.	PHASE=	72.	EMIS.ANG.=	6.	CAM.RAD.=	4677.2 KM.		SUN AZH=111.3	
		LAC 26	EUDOXUS, DU			>1/2 MOON	SPHERE			LAC 44	CLEOMEDES,					LAC 1 N-POLE NEARSIDE
L 4	2	103	41°82N	11°28E	19	***	061816	5-18-67 LUNAR	ORB LO, F=80MM B&W	-	NONE	2927K	36587500	107	1.7 22	-.00
		CAM.NAD.=	42.76N	7.57E		SWING=	272.	PHASE=	72.	EMIS.ANG.=	5.	CAM.RAD.=	4666.2 KM.		SUN AZH=110.7	
		LAC 26	EUDOXUS, BURG			>1/2 MOON	SPHERE									LAC 1 N-POLE NEARSIDE BYRD, PEARY >80 N
L 4	1	104	70°35N	18°10E	19	***	065708	5-18-67 LUNAR	ORB H1, 610MM B&W	-	NONE	3428K	5619672	153	.9 12	-. 1
		CAM.NAD.=	71.87N	15.88E		SWING=	330.	PHASE=	80.	EMIS.ANG.=	3.	CAM.RAD.=	5167.2 KM.		SUN AZH=125.4	
		LAC 4	METON, DESIT			LAC 3	PHILOLAUS, B			LAC 13	ARISTOTE.,					LAC 12 PLATO, ALPINE VAL.
																LAC 1 N-POLE NEARSIDE
L 4	2	104*	70°35N	18°10E	19	***	065708	5-18-67 LUNAR	ORB LO, F=80MM B&W	-	NONE	3428K	42850000	153	.9 12	-.00
		CAM.NAD.=	71.87N	15.88E		SWING=	330.	PHASE=	80.	EMIS.ANG.=	3.	CAM.RAD.=	5167.2 KM.		SUN AZH=125.4	
		LAC 4	METON, DESITTER			>1/4 MOONS	SPHERE			LAC 58	COPERNICUS, REINH					LAC 1 N-POLE NEARSIDE B & LAC 16
L 4	2	110*	42°60N	3°35E	20	***	182013	5-18-67 LUNAR	ORB LO, F=80MM B&W	-	NONE	2916K	36450000	94	1.1 21	-.10
		CAM.NAD.=	42.77N	0.86E		SWING=	259.	PHASE=	72.	EMIS.ANG.=	3.	CAM.RAD.=	4655.2 KM.		SUN AZH=109.6	
		DEGRADED	NEGATIVE			LAC 25	CASSINI, AL			>1/2 MOON	SPHERE					LAC 1 N-POLE NEARSIDE BYRD, PEARY >80 N & LAC 79 COLOMBO, NE.M.
L 4	2	115	42°28N	2°67W	21	***	062212	5-19-67 LUNAR	ORB LO, F=80MM B&W	-	NONE	2905K	36312500	101	1.4 21	-.21
		CAM.NAD.=	42.76N	5.70W		SWING=	266.	PHASE=	73.	EMIS.ANG.=	4.	CAM.RAD.=	4644.2 KM.		SUN AZH=109.5	
		LAC 25	CASSINI, AL			>1/2 MOON	SPHERE			LAC 76	RIPHAUS H					LAC 1 N-POLE NEARSIDE BYRD, PEARY >80 N & LAC 16
L 4	1	116	70°80N	4°49E	21	***	070041	5-19-67 LUNAR	ORB H1, 610MM B&W	-	NONE	3397K	5568852	148	.6 12	-. 6
		CAM.NAD.=	71.88N	2.48E		SWING=	326.	PHASE=	80.	EMIS.ANG.=	2.	CAM.RAD.=	5136.2 KM.		SUN AZH=124.1	
		LAC 3	PHILOLAUS, B			LAC 4	METON, DESIT			LAC 12	PLATO, ALPI					LAC 13 ARISTOTE., M.FRIG
																LAC 1 N-POLE NEARSIDE
L 4	2	122	42°08N	9°24W	22	***	182411	5-19-67 LUNAR	ORB LO, F=80MM B&W	-	NONE	2895K	36187500	105	1.4 21	-.22
		CAM.NAD.=	42.76N	12.27W		SWING=	270.	PHASE=	73.	EMIS.ANG.=	4.	CAM.RAD.=	4634.2 KM.		SUN AZH=109.1	
		LAC 25	CASSINI, AL			>1/2 MOON	SPHERE			LAC 76	RIPHAUS H					LAC 1 N-POLE NEARSIDE BYRD, PEARY >80 N & LAC 14 ENDYMION, STRA
L 4	2	127	41°21N	14°29W	23	***	062610	5-20-67 LUNAR	ORB LO, F=80MM B&W	-	NONE	2886K	36075000	114	2.2 22	-.29
		CAM.NAD.=	42.81N	18.79W		SWING=	278.	PHASE=	74.	EMIS.ANG.=	6.	CAM.RAD.=	4625.2 KM.		SUN AZH=109.6	
		LAC 24	SINUS IRID			>1/2 MOON	SPHERE			LAC 76	RIPHAUS H					LAC 1 N-POLE NEARSIDE BYRD, PEARY >80 N & LAC 146 N-POLE FARSI

MIS SION	MAG ROLL	FR. PHOTO OR LAT.	PRIN. PT. OR LAT.	ORB #	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUBE PRIN. PT.	T I L T AZ ANG. FR. VERT	SUN SIDE, ANG. FWD. LAP %
L 4	1	128 69.92N	9.43W	23 ***	070417	5-20-67	LUNAR ORB HI, 610MM B&W	-	NONE 3369K	5522951	171 1.0 12	-.9
CAM.NAD.= 71.89N 10.32W SWING= 347. PHASE= 80. EMIS.ANG.= 3. CAM.RAD.= 5108.2 KH. SUN AZH=122.3												
LAC 3 PHILOLAUS, B ; LAC 4 METON, DESIT ; LAC 12 PLATO, ALPI ; LAC 11 J.HERSCHEL, JURAS, BOUGUFR & LAC 2 ANAXIMENES, PAS												
L 4	2	134 46.31N	18.14W	24 ***	182759	5-20-67	LUNAR ORB LO, F=80MM B&W	-	NONE 2879K	35987500	53 3.7 21	-.39
CAM.NAD.= 42.80N 25.31W SWING= 218. PHASE= 74. EMIS.ANG.= 10. CAM.RAD.= 4618.2 KH. SUN AZH=113.2												
LAC 24 SINUS IRID ; >1/2 MOON SPHERE ; LAC 75 LETRONNE, F ; LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N & LAC 14 ENDYMION, STRA												
L 4	2	139 42.17N	28.25W	25 ***	062940	5-21-67	LUNAR ORB LO, F=80MM B&W	-	NONE 2872K	35900000	102 1.6 20	-.24
CAM.NAD.= 42.82N 31.79W SWING= 267. PHASE= 74. EMIS.ANG.= 4. CAM.RAD.= 4611.2 KH. SUN AZH=108.6												
LAC 24 SINUS IRID ; >1/2 MOON SPHERE ; LAC 74 GRIMALDI, B ; LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N & LAC 14 ENDYMION, STRA												
L 4	1	140 71.05N	16.31W	25 ***	070801	5-21-67	LUNAR ORB HI, 610MM B&W	-	NONE 3355K	5500000	117 1.2 13	-.22
CAM.NAD.= 72.21N 22.53W SWING= 297. PHASE= 81. EMIS.ANG.= 3. CAM.RAD.= 5094.2 KH. SUN AZH=127.7												
LAC 3 PHILOLAUS, BARROW ; LAC 11 J.HERSCHEL, JURAS, BOUGUE ; LAC 12 PLATO, ALPINE VAL. & LAC 4 METON, DESITTE												
L 4	2	140 71.06N	16.31W	25 ***	070801	5-21-67	LUNAR ORB LO, F=80MM B&W	-	NONE 3355K	41937500	117 1.2 13	-.22
CAM.NAD.= 72.21N 22.53W SWING= 297. PHASE= 81. EMIS.ANG.= 3. CAM.RAD.= 5094.2 KH. SUN AZH=127.7												
LAC 3 PHILOLAUS, B ; >1/2 MOON SPHERE ; LAC 38 SELEUCUS, S ; LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N & LAC 16												
L 4	2	151 40.88N	40.20W	27 ***	063228	5-22-67	LUNAR ORB LO, F=80MM B&W	-	NONE 2866K	35825000	118 2.4 21	-.22
CAM.NAD.= 42.84N 44.74W SWING= 282. PHASE= 75. EMIS.ANG.= 6. CAM.RAD.= 4605.2 KH. SUN AZH=108.3												
LAC 23 RUMKER, SHA ; >1/2 MOON SPHERE ; LAC 74 GRIMALDI, B ; LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N & LAC 13 ARISTOTE, H, F												
L 4	1	152 69.78N	29.61W	27 ***	071044	5-22-67	LUNAR ORB HI, 610MM B&W	-	NONE 3345K	5483607	142 1.5 13	-.15
CAM.NAD.= 72.22N 34.79W SWING= 321. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5084.2 KH. SUN AZH=126.4												
LAC 3 PHILOLAUS, BARROW ; LAC 2 ANAXIMENES, PASCAL ; LAC 11 J.HERSCHEL, JURAS, BOUGUER & LAC 1 N. POLE NEAR SI												
L 4	2	158 42.00N	47.66W	28 ***	183333	5-22-67	LUNAR ORB LO, F=80MM B&W	-	NONE 2866K	35825000	106 1.7 20	-.22
CAM.NAD.= 42.85N 51.22W SWING= 271. PHASE= 75. EMIS.ANG.= 4. CAM.RAD.= 4605.2 KH. SUN AZH=107.7												
LAC 23 RUMKER, SHARP ; >1/2 MOON SPHERE ; LAC 73 RICCIOLI, NE. ORIENTAL & LAC 1 N. POLE NEAR SI												
L 4	2	163 41.22N	53.38W	29 ***	063426	5-23-67	LUNAR ORB LO, F=80MM B&W	-	NONE 2867K	35837500	115 2.2 20	-.22
CAM.NAD.= 42.87N 57.71W SWING= 279. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4606.2 KH. SUN AZH=107.7												
LAC 23 RUMKER, SHARP ; >1/2 MOON SPHERE ; LAC 73 RICCIOLI, NE. ORIENTAL & LAC 1 N. POLE NEAR SI												
L 4	1	164 70.19N	41.50W	29 ***	071247	5-23-67	LUNAR ORB HI, 610MM B&W	-	NONE 3346K	5484246	136 1.4 13	-.16
CAM.NAD.= 72.26N 47.11W SWING= 313. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5085.2 KH. SUN AZH=126.8												
LAC 2 ANAXIMENES, PASCAL ; LAC 3 PHILOLAUS, BARROW ; LAC 10 BABBAGE, N. PROCELARM. & LAC 11 J.HERSCHEL, J												
L 4	2	165 38.83N	81.13E	29 ***	094351	5-23-67	LUNAR ORB LO, F=80MM B&W	-	NONE 5487K	68587499	290 7.6 14	-.22
CAM.NAD.= 33.96N 112.70E SWING= 282. PHASE= 109. EMIS.ANG.= 33. CAM.RAD.= 7226.2 KH. SUN AZH=259.4												
LAC 28 GAUSS, MESS ; >1/4 MOONS SPHERE ; LAC 98 PETAVIUS, H ; LAC 4 METON, DESITTER & LAC 1 N. POLE NEAR SI												
L 4	2	175 41.29N	64.78W	31 ***	063541	5-24-67	LUNAR ORB LO, F=80MM B&W	-	NONE 2872K	35900000	116 2.0 19	-.90
CAM.NAD.= 42.86N 70.79W SWING= 279. PHASE= 76. EMIS.ANG.= 5. CAM.RAD.= 4611.2 KH. SUN AZH=106.8												
LAC 24 SE. GERARD, BUNSEN, HARDING ; >1/2 MOON SPHERE ; LAC 73 RICCIOLI, NE. ORIENTAL & LAC 1 N. POLE NEAR SI												

MIS SION	MAG ROLL	FR- OR	PHOTO LAT.	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES=HR	GMT H SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.MI K*KM.	SCALE PRIN. PT.	TILT AZ	TILT ANG.	TILT ANG.	SUN FWD.	SIDE LAP
L 4	1	176	69.97N	54.78W	31	***	071413	5-24-67	LUNAR ORB H1. 610MM B&W	-	NONE	3354K	5498361	142	1.5	13	-	18
CAM.NAD.= 72.28N 59.77W SWING= 320. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5093.2 KH. SUN AZH=125.7																		
LAC 2 ANAXIMENES,PASCAL ; LAC 3 PHILOLAUS,BARROW ; LAC 10 BABBAGE,N.PROCELARH. ; LAC 11 J.HERSCHEL,J																		
L 4	2	183	43.53N	71.02W	32	***	183607	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2874K	35925000	79	2.8	20	-	90
CAM.NAD.= 42.84N 77.39W SWING= 242. PHASE= 77. EMIS.ANG.= 8. CAM.RAD.= 4613.2 KH. SUN AZH=108.9																		
LAC 22 SE.GERARD,BUNSEN,HARDING ; >1/2 MOON SPHERE ; LAC 90 LOWELL ; LAC 1 N-POLE NEARSI																		
L 4	2	189	41.72N	79.99W	33	***	063636	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2878K	35975000	110	1.9	18	-	90
CAM.NAD.= 42.88N 84.00W SWING= 273. PHASE= 77. EMIS.ANG.= 5. CAM.RAD.= 4617.2 KH. SUN AZH=106.1																		
LAC 22 SE.GERARD,BUNSEN,HARDING ; >1/2 MOON SPHERE ; LAC 108 H.ORIEN(SW 1/3 0) ; LAC 1 N-POLE NEARSI																		
L 4	1	190	70.34N	63.47W	33	***	071553	5-25-67	LUNAR ORB H1. 610MM B&W	-	NONE	3373K	5529508	125	1.9	14	-	48
CAM.NAD.= 72.71N 72.45W SWING= 306. PHASE= 82. EMIS.ANG.= 6. CAM.RAD.= 5112.2 KH. SUN AZH=129.2																		
LAC 10 BABBAGE,N.PROCELARH. ; LAC 3 PHILOLAUS,BARROW ; LAC 9 CREMONA																		
L 4	2	1915	38.29N	53.79E	33	***	094706	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	5503K	68787499	288	7.0	16	-	90
CAM.NAD.= 33.95N 86.05E SWING= 282. PHASE= 107. EMIS.ANG.= 34. CAM.RAD.= 7242.2 KH. SUN AZH=257.6																		
DEGRADED NEGATIVE ; LAC 27 GEMINUS,AT ; >1/2 MOON SPHERE ; LAC 98 PETAVIUS,HOLDEN ; LAC 26 EUDOXUS,BURG																		
L 4	2	1925	38.22N	53.84E	33	***	094709	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	5504K	68799999	288	7.7	16	-	90
CAM.NAD.= 33.93N 86.05E SWING= 282. PHASE= 107. EMIS.ANG.= 34. CAM.RAD.= 7243.2 KH. SUN AZH=257.7																		
DEGRADED NEGATIVE ; LAC 27 GEMINUS,AT ; >1/2 MOON SPHERE ; LAC 80 LANGRENUS,H.FERT. ; LAC 26 EUDOXUS,BURG																		
L 5	2	5	59.91N	111.74W	2	***	112203	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2647K	33087500	286	9.7	8	-	90
CAM.NAD.= 58.97N 81.16W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4386.2 KH. SUN AZH=259.5																		
LAC 20 COULOMB ; >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N-POLE NEAR SIDE BYRD,PEARY >80 N ; LAC 5 PETERMANN, HAY																		
L 5	2	6	59.85N	111.66W	2	***	112205	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2648K	33100000	286	9.7	8	-	90
CAM.NAD.= 58.94N 81.15W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4387.2 KH. SUN AZH=259.6																		
LAC 20 COULOMB ; >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N-POLE NEAR SIDE BYRD,PEARY >80 N ; LAC 5 PETERMANN, HAY																		
L 5	2	7	59.78N	111.58W	2	***	112208	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2650K	33125000	286	9.7	8	-	90
CAM.NAD.= 58.91N 81.14W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4389.2 KH. SUN AZH=259.7																		
LAC 20 COULOMB ; >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N-POLE NEAR SIDE BYRD,PEARY >80 N ; LAC 5 PETERMANN, HAY																		
L 5	2	8	59.72N	111.50W	2	***	112211	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2652K	33150000	286	9.6	8	-	90
CAM.NAD.= 58.88N 81.12W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4391.2 KH. SUN AZH=259.8																		
LAC 20 COULOMB ; >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N-POLE NEAR SIDE BYRD,PEARY >80 N ; LAC 5 PETERMANN, HAY																		
L 5	2	9	59.65N	111.42W	2	***	112214	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2654K	33175000	286	9.6	8	-	90
CAM.NAD.= 58.85N 81.11W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4393.2 KH. SUN AZH=259.8																		
LAC 20 COULOMB ; >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N-POLE NEAR SIDE BYRD,PEARY >80 N ; LAC 5 PETERMANN, HAY																		
L 5	2	10	59.59N	111.34W	2	***	112216	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2656K	33200000	285	9.6	8	-	90
CAM.NAD.= 58.82N 81.10W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4395.2 KH. SUN AZH=259.9																		
LAC 20 COULOMB ; >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N-POLE NEAR SIDE BYRD,PEARY >80 N ; LAC 5 PETERMANN, HAY																		



HIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T I	L T	SUN SIDE,
SION ROLL	OR	LAT.	#	TIMES-HR	M	SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG. FWD.
#	#	MAIN	LONG.	(I=ESTIMATED)				TYPE		M=N, MI	PT.	FR.	LAP	
		#								K=KM.		VERT		8. 8
L 5	2	11	59.52N 111.27W	2	00	00	112219	8-06-67	LUNAR ORB LO, F=80MM B&W	-	NONE	2657K 33212500	285	9.6 8 -90
CAM. NAD. = 58.79N 81.09W SWING = 90. PHASE = 107. EMIS. ANG. = 25. CAM. RAD. = 4398.2 KM. SUN AZH = 260.0														
LAC 20 COULOMB 1 W>1/2 MOON SPHERE 1 LUNAR N. HEMISPHE 1 LAC 1 N. POLE NEAR <sup>S</sup> IDE BYRD, PEARY >80 N & LAC 5 PETERMANN, HAY														
L 5	2	12	59.46N 111.19W	2	00	00	112222	8-06-67	LUNAR ORB LO, F=80MM B&W	-	NONE	2659K 33237500	285	9.6 8 -90
CAM. NAD. = 58.75N 81.08W SWING = 90. PHASE = 107. EMIS. ANG. = 25. CAM. RAD. = 4398.2 KM. SUN AZH = 260.1														
LAC 20 COULOMB 1 W>1/2 MOON SPHERE 1 LUNAR N. HEMISPHE 1 LAC 1 N. POLE NEAR <sup>S</sup> IDE BYRD, PEARY >80 N & LAC 5 PETERMANN, HAY														

TOTAL PHOTOS IN THIS GROUP = 45

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR ( ) = NO INFO    @ = APPROXIMATELY    NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10° AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE.
SION	ROLL	ON	LAT.				TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
H	H	MAIN	LUNG.				(=ESTIMATED)			TYPE		M=N.MI	PT.		FR.	LAP	
		H										K=KM.			VERT		S. S
L 4	1	128	69.92N	9.43W	23	***	070417	5-20-67	LUNAR ORB HI.	610MM B&W	-	NONE	3369K	5522951	171	1.0 12	- .9
			CAM.NAD.= 71.89N	10.32W			SWING= 347.		PHASE= 80.	EMIS.ANG.= 3.	CAM.RAD.=	5108.2 KM.				SUN AZH=122.3	
			LAC 3 PHILOLAUS, B	LAC 4 METON, DESIT					LAC 12 PLATO, ALPI							LAC 11 J.HERSCHEL, JURAS, BOUGUER	LAC 2 ANAXIMENES, PAS
L 4	2	133	18.74N	29.69W	24	***	175540	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2673K	33412500	340	3.3 19	- .20	
			CAM.NAD.= 13.91N	27.86W			SWING= 156.		PHASE= 68.	EMIS.ANG.= 8.	CAM.RAD.=	4412.2 KM.				SUN AZH= 95.9	
			LAC 40 TIHOCHARIS, LAMBERT				@ > 1/2 MOON SPHERE									LAC 93 M.HUMOR, GASSFNDI	LAC 2 ANAXIMENES, PA
L 4	1	140	71.05N	16.31W	25	***	070801	5-21-67	LUNAR ORB HI.	610MM B&W	-	NONE	3355K	5500800	117	1.2 13	- .22
			CAM.NAD.= 72.21N	22.53W			SWING= 297.		PHASE= 81.	EMIS.ANG.= 3.	CAM.RAD.=	5074.2 KM.				SUN AZH=127.7	
			LAC 3 PHILOLAUS, BARROW						LAC 11 J.HERSCHEL, JURAS, BOUGUE							LAC 12 PLATO, ALPINE VAL.	LAC 4 METON, DESITTE
L 4	1	152	69.78N	29.61W	27	***	071044	5-22-67	LUNAR ORB HI.	610MM B&W	-	NONE	3345K	5483607	142	1.5 13	- .15
			CAM.NAD.= 72.22N	34.79W			SWING= 321.		PHASE= 81.	EMIS.ANG.= 4.	CAM.RAD.=	5084.2 KM.				SUN AZH=126.4	
			LAC 3 PHILOLAUS, BARROW						LAC 2 ANAXIMENES, PASCAL							LAC 11 J.HERSCHEL, JURAS, BOUGUER	LAC 1 N.POLE NEARSI
L 4	1	164	70.19N	41.50W	29	***	071247	5-23-67	LUNAR ORB HI.	610MM B&W	-	NONE	3346K	5485246	136	1.4 13	- .16
			CAM.NAD.= 72.26N	47.11W			SWING= 313.		PHASE= 81.	EMIS.ANG.= 4.	CAM.RAD.=	5085.2 KM.				SUN AZH=126.8	
			LAC 2 ANAXIMENES, PASCAL						LAC 3 PHILOLAUS, BARROW							LAC 10 BABBAGE, N.PROCELARN.	LAC 11 J.HERSCHEL, J
L 4	2	164	70.20N	41.50W	29	***	071247	5-23-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3346K	41825000	136	1.4 13	- .00	
			CAM.NAD.= 72.26N	47.11W			SWING= 313.		PHASE= 81.	EMIS.ANG.= 4.	CAM.RAD.=	5085.2 KM.				SUN AZH=126.8	
			LAC 2 ANAXIMENES, PASCAL				@ > 1/2 MOON SPHERE									LAC 22 SE.GERARD, BUNSEN,	LAC 15 M.HUMBOLDTIANUM
																LAC 42 M.SERENITY	
L 4	1	176	69.97N	54.78W	31	***	071413	5-24-67	LUNAR ORB HI.	610MM B&W	-	NONE	3354K	5498361	142	1.5 13	- .18
			CAM.NAD.= 72.28N	59.77W			SWING= 320.		PHASE= 81.	EMIS.ANG.= 4.	CAM.RAD.=	5093.2 KM.				SUN AZH=125.7	
			LAC 2 ANAXIMENES, PASCAL						LAC 3 PHILOLAUS, BARROW							LAC 10 BABBAGE, N.PROCELARN.	LAC 11 J.HERSCHEL, J
L 4	1	190	70.34N	63.47W	33	***	071553	5-25-67	LUNAR ORB HI.	610MM B&W	-	NONE	3373K	5529508	125	1.9 14	- .48
			CAM.NAD.= 72.71N	72.45W			SWING= 306.		PHASE= 82.	EMIS.ANG.= 6.	CAM.RAD.=	5112.2 KM.				SUN AZH=129.2	
			LAC 2 ANAXIMENES, PASCAL						LAC 10 BABBAGE, N.PROCELARN.							LAC 3 PHILOLAUS, BARROW	LAC 9 CREMONA
L 4	2	190	70.34N	63.47W	33	***	071554	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3373K	42162500	125	1.9 14	- .00	
			CAM.NAD.= 72.71N	72.45W			SWING= 306.		PHASE= 82.	EMIS.ANG.= 6.	CAM.RAD.=	5112.2 KM.				SUN AZH=129.2	
			LAC 2 ANAXIMENES, 1	@ > 1/2 MOON SPHERE					LAC 54 BELB LAUE							LAC 15 M.HUMBOLDTIANUM	LAC 27 GEMINUS, ATLAS

HIS MAG		FR, PHOTO	PRIN. PT.	ORB	GET	GMT	H=DA-YR
SION ROLL	OR	LAT.	H	TIMES-HR	M	SEC	
#	#	MAIN	LONG.	(!=ESTIMATED)			

CAMERA-LENS OR SENSOR TYPE
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FILM-EXPOSURE AND FILTER
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ALTI SCALE AT	T I L T	SUN SIDE
TUDE	PRIN.	AZ ANG. ANG. FW
H=N, HI	PT.	FR. L
K=KH.		VERT 3.

TOTAL PHOTOS IN THIS GROUP = 9

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS;  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO # = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH,MM, & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT D.C.

MIS SION	MAG ROLL	FR,PHOTO OR MAIN	PRIN.PT. LAT. LONG.	ORB #	GET TIMES-HR	GHT M SEC (I=ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. H=N,HI PT. K=KM.	T I L T AZ ANG. ANG. FWD. FR. LAP VERT %	SUN SIDE, ANG. ANG. FWD. FR. LAP VERT %
L 4	2	116 70.80N	4.49E 21 ***	070041	5-19-67	LUNAR	ORB LO,F=80MM B&W	-	NONE	3397K 42462500	148	6 12 -.
CAM.NAD.= 71.88N 2.48E SWING= 326. PHASE= 80. EHIS.ANG.= 2. CAM.RAD.= 5136.2 KH. SUN AZH=124.1												
LAC 3 PHILOLAUS,B I LAC 7 KARPINSKY ; LAC 41 APENNINES, ; LAC 1 N.POLE NEARSIDE BYRD,PEARY >80 N & LAC 17												
L 4	1	92 71.16N	32.23E 17 ***	065357	5-17-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3457K 5667213	129	6 12 -.
CAM.NAD.= 71.92N 29.48E SWING= 306. PHASE= 79. EHIS.ANG.= 2. CAM.RAD.= 5196.2 KH. SUN AZH=127.4												
LAC 4 METON,DESIT I LAC 5 PETERMANN, ; LAC 3 PHILOLAUS,B I LAC 13 ARISTOTE.,M.FRIG & LAC 1 N.POLE NEARSID												
L 4	1	104 70.25N	18.10E 19 ***	065708	5-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3428K 5619672	153	9 12 -.
CAM.NAD.= 71.87N 15.88E SWING= 330. PHASE= 80. EHIS.ANG.= 3. CAM.RAD.= 5167.2 KH. SUN AZH=125.4												
LAC 4 METON,DESIT I LAC 3 PHILOLAUS,B I LAC 13 ARISTOTE., ; LAC 12 PLATO,ALPINE VAL. & LAC 1 N.POLE NEARSID												
L 4	1	116 70.80N	4.49E 21 ***	070041	5-19-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3397K 5568852	148	6 12 -.
CAM.NAD.= 71.88N 2.48E SWING= 326. PHASE= 80. EHIS.ANG.= 2. CAM.RAD.= 5136.2 KH. SUN AZH=124.1												
LAC 3 PHILOLAUS,B I LAC 4 METON,DESIT I LAC 12 PLATO,ALPI I LAC 13 ARISTOTE.,M.FRIG & LAC 1 N.POLE NEARSID												
L 4	1	128 69.92N	9.43W 23 ***	070417	5-20-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3369K 5522951	171	1.0 12 -.
CAM.NAD.= 71.89N 10.32W SWING= 347. PHASE= 80. EHIS.ANG.= 3. CAM.RAD.= 5108.2 KH. SUN AZH=122.3												
LAC 3 PHILOLAUS,B I LAC 4 METON,DESIT ; LAC 12 PLATO,ALPI I LAC 11 J.HERSCHEL,JURAS,ROUGER & LAC 2 ANAXIMENES,PAS												
L 4	2	128 69.92N	9.43W 23 ***	070417	5-20-67	LUNAR	ORB LO,F=80MM B&W	-	NONE	3369K 42112500	171	1.0 12 -.
CAM.NAD.= 71.90N 10.32W SWING= 347. PHASE= 80. EHIS.ANG.= 3. CAM.RAD.= 5108.2 KH. SUN AZH=122.3												
LAC 3 PHILOLAUS,BARROW ; D>1/2 MOON SPHERE I LAC 58 COPERNICUS,RFINHOLD & LAC 17												
L 4	1	134 46.31N	18.14W 24 ***	102759	5-20-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2878K 4718033	53	3.7 21 -.
CAM.NAD.= 42.80N 25.30W SWING= 218. PHASE= 74. EHIS.ANG.= 10. CAM.RAD.= 4617.2 KH. SUN AZH=113.2												
EASTERN PART OF LAC 24 SINUS IRIDU I LAC 25 CASSINI,ALP ; LAC 12 PLATO,ALPI ; LAC 40 TIHOCHARIS,LAMBERT & LAC 3 PHILOLAUS,												
L 4	1	140 71.05N	16.31W 25 ***	070801	5-21-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3355K 5500000	117	1.2 13 -.
CAM.NAD.= 72.21N 22.53W SWING= 297. PHASE= 81. EHIS.ANG.= 3. CAM.RAD.= 5074.2 KH. SUN AZH=127.7												
LAC 3 PHILOLAUS,BARROW ; LAC 11 J.HERSCHEL,JURAS,BOUGUE; LAC 12 PLATO,ALPINE VAL. & LAC 4 METON,DESITTE												

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LAT.	PT. LAT.	ORB LAT.	GET TIMES	GNT HR	M-DA-YR M SEC	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN.	AT PT.	T AZ	L ANG.	T ANG.	SUN FR.	SIDE ANG.
L 4	2	140	71.06N	16.31W	25	000	070801	5-21-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	3355K	41937500	117	1.2	13	-	
CAM.NAD.= 72.21N 22.53W SWING= 297. PHASE= 81. EMIS.ANG.= 3. CAM.RAD.= 5094.2 KM. SUN AZH=127.7																			
LAC 3 PHILOLAUS, B ; W>1/2 MOON SPHERE ; LAC 30 SELEUCUS, S ; LAC 1 N. POLE NEAR SIDE BYRD, PFARY >80 N & LAC 16																			
L 4	1	152	69.78N	29.61W	27	000	071044	5-22-67	LUNAR ORB	HI. 610MM B&W	-	NONE	3345K	5483607	142	1.5	13	-	
CAM.NAD.= 72.22N 34.79W SWING= 321. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5084.2 KM. SUN AZH=126.4																			
LAC 3 PHILOLAUS, BARROW ; LAC 2 ANAXIMENES, PASCAL ; LAC 11 J. HERSCHEL, JURAS, BOUGUER & LAC 1 N. POLE NEAR SI																			
L 4	2	152	69.78N	29.61W	27	000	071044	5-22-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	3345K	41812500	142	1.5	13	-	
CAM.NAD.= 72.23N 34.79W SWING= 321. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5084.2 KM. SUN AZH=126.4																			
LAC 3 PHILOLAUS, B ; W>1/2 MOON SPHERE ; LAC 39 ARISTARCHU ; LAC 6 & LAC 15 H. HUMBOLDTIANU																			
L 4	1	164	70.19N	41.50W	29	000	071247	5-23-67	LUNAR ORB	HI. 610MM B&W	-	NONE	3346K	5485246	136	1.4	13	-	
CAM.NAD.= 72.26N 47.11W SWING= 313. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5085.2 KM. SUN AZH=126.8																			
LAC 2 ANAXIMENES, PASCAL ; LAC 3 PHILOLAUS, BARROW ; LAC 10 BABBAGE, N. PROCELARH. & LAC 11 J. HERSCHEL, J																			
L 4	1	176	69.97N	54.78W	31	000	071413	5-24-67	LUNAR ORB	HI. 610MM B&W	-	NONE	3354K	5498361	142	1.5	13	-	
CAM.NAD.= 72.28N 59.77W SWING= 320. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5093.2 KM. SUN AZH=125.7																			
LAC 2 ANAXIMENES, PASCAL ; LAC 3 PHILOLAUS, BARROW ; LAC 10 BABBAGE, N. PROCELARH. & LAC 11 J. HERSCHEL, J																			
L 4	1	177	38.81N	67.86E	31	000	094528	5-24-67	LUNAR ORB	HI. 610MM B&W	-	NONE	5492K	9001279	290	7.6	15	-	
CAM.NAD.= 33.96N 99.33E SWING= 282. PHASE= 108. EMIS.ANG.= 33. CAM.RAD.= 7231.2 KM. SUN AZH=258.7																			
LAC 28 GAUSS, MESS ; W1/4 MOON SPHERE ; LAC 3 PHILOLAUS, B ; LAC 4 HETON, DESITTER & LAC 44 CLEOHEDES, H.C																			
L 4	1	190	70.34N	63.47W	33	000	071553	5-25-67	LUNAR ORB	HI. 610MM B&W	-	NONE	3373K	5529508	125	1.9	14	-	
CAM.NAD.= 72.71N 72.45W SWING= 306. PHASE= 82. EMIS.ANG.= 6. CAM.RAD.= 5112.2 KM. SUN AZH=129.2																			
LAC 2 ANAXIMENES, PASCAL ; LAC 10 BABBAGE, N. PROCELARH. ; LAC 3 PHILOLAUS, BARROW & LAC 9 CREMONA																			

TOTAL PHOTOS IN THIS GROUP = 15

## LAC 4 METON, DESITTER

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO @ = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10= AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

HIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T 1 L T	SUN SIDE,
SION ROLL	OR	LAT.	#	TIMES-HR	M	SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
#	#	MAIN	LONG.	(=ESTIMATED)				TYPE		H=N, HI	PT.	FR.	LAP
										K=KH.		VERT	8, 7
L 4	2	92	71.17N	32.23E	17	00	065357	5-17-67 LUNAR ORB LO, F=80MM B&W	-	NONE	3457K	43212500	129 .6 12 -.90
		CAM.NAD.= 71.92N	29.48E	SWING= 306.				PHASE= 79. EMIS.ANG.= 2.	CAM.RAD.=	5196.2 KH.		SUN AZH=127.4	
		LAC 4 METON, DESIT		LAC 7 KARPINSKY				LAC 41 APENNINES, LAC 44 CLEOMEDES, H.CRI.				& LAC 18 TIKHOV	
L 4	1	56	70.35N	68.44E	11	00	064639	5-14-67 LUNAR ORB HI, 610MM B&W	-	NONE	3495K	5729508	214 .8 13 -.90
		CAM.NAD.= 71.63N	71.06E	SWING= 25.				PHASE= 78. EMIS.ANG.= 2.	CAM.RAD.=	5234.2 KH.		SUN AZH=126.8	
		LAC 5 PETERMANN,		LAC 4 METON, DESIT				LAC 14 ENDYMION, S LAC 15 M.HUMBOLDTIANUM				& LAC 1 N.POLE NEARSID	
L 4	1	68	70.93N	53.66E	13	00	064827	5-15-67 LUNAR ORB HI, 610MM B&W	-	NONE	3488K	5718033	239 .7 12 -.90
		CAM.NAD.= 71.63N	57.12E	SWING= 50.				PHASE= 78. EMIS.ANG.= 2.	CAM.RAD.=	5227.2 KH.		SUN AZH=124.4	
		LAC 4 METON, DESIT		LAC 5 PETERMANN,				LAC 14 ENDYMION, S LAC 1 N.POLE NEARSIDE BYRD, PEARY >80 N & LAC 146 N.POLE FARSI					
L 4	2	685	70.93N	53.66E	13	00	064827	5-15-67 LUNAR ORB LO, F=80MM B&W	-	NONE	3488K	43600000	239 .7 12 -.10
		CAM.NAD.= 71.63N	57.12E	SWING= 50.				PHASE= 78. EMIS.ANG.= 2.	CAM.RAD.=	5227.2 KH.		SUN AZH=124.4	
								& LAC 4 METON, DESITTER					
L 4	1	80	70.45N	46.09E	15	00	065107	5-16-67 LUNAR ORB HI, 610MM B&W	-	NONE	3479K	5703279	147 .8 13 -.90
		CAM.NAD.= 71.89N	43.34E	SWING= 323.				PHASE= 79. EMIS.ANG.= 3.	CAM.RAD.=	5218.2 KH.		SUN AZH=128.9	
		LAC 4 METON, DESIT		LAC 5 PETERMANN,				LAC 13 ARISTOTE., LAC 14 ENDYMION, STRABO				& LAC 1 N.POLE NEARSID	
L 4	2	805	70.45N	46.09E	15	00	065107	5-16-67 LUNAR ORB LO, F=80MM B&W	-	NONE	3479K	43487500	146 .8 13 -.90
		CAM.NAD.= 71.89N	43.34E	SWING= 323.				PHASE= 79. EMIS.ANG.= 3.	CAM.RAD.=	5218.2 KH.		SUN AZH=128.9	
								LAC 4 METON, DESITTER				& Q>1/2 MOON SPHERE	
L 4	1	92	71.16N	32.23E	17	00	065357	5-17-67 LUNAR ORB HI, 610MM B&W	-	NONE	3457K	5667213	129 .6 12 -.90
		CAM.NAD.= 71.92N	29.48E	SWING= 306.				PHASE= 79. EMIS.ANG.= 2.	CAM.RAD.=	5196.2 KH.		SUN AZH=127.4	
		LAC 4 METON, DESIT		LAC 5 PETERMANN,				LAC 3 PHILOLAUS, B LAC 13 ARISTOTE., H.FRIG				& LAC 1 N.POLE NEARSID	
L 4	1	104	70.35N	18.10E	19	00	065708	5-18-67 LUNAR ORB HI, 610MM B&W	-	NONE	3428K	5619672	153 .9 12 -.90
		CAM.NAD.= 71.87N	15.88E	SWING= 330.				PHASE= 80. EMIS.ANG.= 3.	CAM.RAD.=	5167.2 KH.		SUN AZH=125.4	
		LAC 4 METON, DESIT		LAC 3 PHILOLAUS, B				LAC 13 ARISTOTE., LAC 12 PLATO, ALPINE VAL.				& LAC 1 N.POLE NEARSID	

REPRODUCIBILITY OF THE  
 ORIGINAL COPY IS POOR

HIS MAG FR. PHOTO PRIN. PT. ORB		GET	GHT	M-DA>YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT SCALE AT	T I L T	SUN SIDE,
SION ROLL	OR	LAT.	#	TIMES-HR M SEC	SENSOR	AND FILTER	TUDE PRIN.	AZ ANG.	ANG. FWD.
#	#	MAIN	LONG.	(ESTIMATED)	TYPE		H=N, MI PT.	FR.	LAP
							K=KM.	VERT	%
L 4 2	104	70.35N	18.10E	19 *** 065708	5-18-67 LUNAR ORB LO, F=80MM B&W	-	NONE 3428K 42850000	153	0.8 12
		CAM.NAD.= 71.87N	15.88E	SWING= 330.	PHASE= 80.	EMIS.ANG.= 3.	CAM.RAD.= 5167.2 KM.	SUN AZH=125.4	-0.0
		LAC 4 METON, DESITTER		1 1/4 MOONS SPHERE ;	LAC 58 COPERNICUS, REINHO ;	LAC 1 N. POLE NEAR SIDE B		LAC 16	
L 4 1	116	70.80N	4.49E	21 *** 070041	5-19-67 LUNAR ORB HI, 610MM B&W	-	NONE 3397K 5568852	148	0.6 12
		CAM.NAD.= 71.88N	2.48E	SWING= 326.	PHASE= 80.	EMIS.ANG.= 2.	CAM.RAD.= 5136.2 KM.	SUN AZH=124.1	-0.6
		LAC 3 PHILOLAUS, B ;	LAC 4 METON, DESIT ;	LAC 12 PLATO, ALPI ;	LAC 13 ARISTOTE., H. FRIG			LAC 1 N. POLE NEAR SID	
L 4 1	128	69.92N	9.43W	23 *** 070417	5-20-67 LUNAR ORB HI, 610MM B&W	-	NONE 3369K 5527951	171	1.0 12
		CAM.NAD.= 71.89N	10.32W	SWING= 347.	PHASE= 80.	EMIS.ANG.= 3.	CAM.RAD.= 5108.2 KM.	SUN AZH=122.3	-0.9
		LAC 3 PHILOLAUS, B ;	LAC 4 METON, DESIT ;	LAC 12 PLATO, ALPI ;	LAC 11 J. HERSCHEL, JURAS, BOUGUER.			LAC 2 ANAXIMENES, PAG	
L 4 1	140	71.05N	16.31W	25 *** 070801	5-21-67 LUNAR ORB HI, 610MM B&W	-	NONE 3355K 5500000	117	1.2 13
		CAM.NAD.= 72.21N	22.53W	SWING= 297.	PHASE= 81.	EMIS.ANG.= 3.	CAM.RAD.= 5094.2 KM.	SUN AZH=127.7	-0.22
		LAC 3 PHILOLAUS, BARRON		1 LAC 11 J. HERSCHEL, JURAS, BOUGUER ;	LAC 12 PLATO, ALPINE VAL.			LAC 4 METON, DESITTE	
L 4 2	165	38.03N	81.13E	29 *** 094351	5-23-67 LUNAR ORB LO, F=80MM B&W	-	NONE 5487K 68587499	290	7.6 14
		CAM.NAD.= 33.96N	112.70E	SWING= 282.	PHASE= 109.	EMIS.ANG.= 33.	CAM.RAD.= 7226.2 KM.	SUN AZH=259.4	-0.0
		LAC 28 GAUSS, HESS ;	1 1/4 MOONS SPHERE ;	LAC 98 PETAVIUS, H ;	LAC 4 METON, DESITTER			LAC 1 N. POLE NEAR SID	
L 4 1	177	38.81N	67.84E	31 *** 094528	5-24-67 LUNAR ORB HI, 610MM B&W	-	NONE 5492K 9003279	290	7.6 15
		CAM.NAD.= 33.96N	99.33E	SWING= 282.	PHASE= 108.	EMIS.ANG.= 33.	CAM.RAD.= 7231.2 KM.	SUN AZH=258.7	-0.0
		LAC 28 GAUSS, HESS ;	1 1/4 MOONS SPHERE ;	LAC 3 PHILOLAUS, B ;	LAC 4 METON, DESITTER			LAC 44 CLEOMEDES, H.C	
L 4 1	191	38.30N	53.79E	33 *** 094706	5-25-67 LUNAR ORB HI, 610MM B&W	-	NONE 5503K 9021311	288	7.7 16
		CAM.NAD.= 33.95N	86.05E	SWING= 282.	PHASE= 107.	EMIS.ANG.= 34.	CAM.RAD.= 7242.2 KM.	SUN AZH=257.6	-0.0
		LAC 27 GEMINUS, AT ;	1 1/4 MOONS SPHERE ;	LAC 4 METON, DESIT ;	LAC 5 PETERMANN, HAYN			LAC 61 TARUNTIUS, LYE	
L 4 1	192	38.22N	53.84E	33 *** 094709	5-25-67 LUNAR ORB HI, 610MM B&W	-	NONE 5504K 9022951	288	7.7 16
		CAM.NAD.= 33.93N	86.05E	SWING= 282.	PHASE= 107.	EMIS.ANG.= 34.	CAM.RAD.= 7243.2 KM.	SUN AZH=257.7	-0.0
		LAC 27 GEMINUS, AT ;	1 1/4 MOONS SPHERE ;	LAC 4 METON, DESIT ;	LAC 5 PETERMANN, HAYN			LAC 61 TARUNTIUS, LYE	

TOTAL PHOTOS IN THIS GROUP = 16

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), (O) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR \*\* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF :/XXX ON ORIG.NFG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR,PHOTO OR	PRIN.PT. LAT.	ORB N	GET TIMES-HR	GNT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN.	AT PT.	T I L T AZ ANG.	SUN SIDE, ANG. FWD. LAP S, S
#	#	MAIN #	LONG.		(ESTIMATED)					H=N,H1 K=KM.			FR. VERT	
L 4	1	425 70.09N	84.08E	9 ***	064506	5-13-67	LUNAR ORB HI, 610MM B&W	-	NONE	3494K	5727869	188	.8 14	-.90
		CAM.HAD.= 71.60N	84.75E		SWING= 357.		PHASE= 78. EMIS.ANG.= 2.		CAM.RAD.=	5233.2 KH.			SUN AZH=130.1	
		DEGRADED NEGATIVE :	LAC 5 PETERMANN,				LAC 15 M.HUMBOLTIANUM						& LAC 1 N.POLE NEARSID	
L 4	2	425 70.09N	84.08E	9 ***	064506	5-13-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3494K	43675000	188	.8 14	-.90
		CAM.HAD.= 71.60N	84.75E		SWING= 357.		PHASE= 78. EMIS.ANG.= 2.		CAM.RAD.=	5233.2 KH.			SUN AZH=130.1	
		DEGRADED NEGATIVE					& LAC 5 PETERMANN, HAYN							
L 4	1	56 70.35N	68.44E	11 ***	064639	5-14-67	LUNAR ORB HI, 610MM B&W	-	NONE	3495K	5729508	214	.8 13	-.90
		CAM.HAD.= 71.63N	71.06E		SWING= 25.		PHASE= 78. EMIS.ANG.= 2.		CAM.RAD.=	5234.2 KH.			SUN AZH=126.8	
		LAC 5 PETERMANN,	LAC 4 METON,DESIT				LAC 14 ENDYMION,S ; LAC 15 M.HUMBOLTIANUM						& LAC 1 N.POLE NEARSID	
L 4	2	565 70.36N	68.44E	11 ***	064639	5-14-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3495K	43687500	215	.8 13	-.90
		CAM.HAD.= 71.63N	71.06E		SWING= 25.		PHASE= 78. EMIS.ANG.= 2.		CAM.RAD.=	5234.2 KH.			SUN AZH=126.8	
		DEGRADED NEGATIVE					& LAC 5 PETERMANN, HAYN							
L 4	1	68 70.93N	53.66E	13 ***	064827	5-15-67	LUNAR ORB HI, 610MM B&W	-	NONE	3488K	5710033	239	.7 12	-.90
		CAM.HAD.= 71.63N	57.12E		SWING= 50.		PHASE= 78. EMIS.ANG.= 2.		CAM.RAD.=	5227.2 KH.			SUN AZH=124.4	
		LAC 4 METON,DESIT ;	LAC 5 PETERMANN,				LAC 14 ENDYMION,S ; LAC 1 N.POLE NEARSIDE BYRD,PEARY >80 N						& LAC 146 N.POLE FARSI	
L 4	1	80 70.45N	46.09E	15 ***	065107	5-16-67	LUNAR ORB HI, 610MM B&W	-	NONE	3479K	5703279	147	.8 13	-.90
		CAM.HAD.= 71.89N	43.34E		SWING= 323.		PHASE= 79. EMIS.ANG.= 3.		CAM.RAD.=	5218.2 KH.			SUN AZH=128.9	
		LAC 4 METON,DESIT ;	LAC 5 PETERMANN,				LAC 13 ARISTOTE., ; LAC 14 ENDYMION,STRABO						& LAC 1 N.POLE NEARSID	
L 4	2	86 71.02N	31.24E	16 ***	181300	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2956K	36950000	122	1.9 24	-.90
		CAM.HAD.= 42.80N	27.61E		SWING= 286.		PHASE= 71. EMIS.ANG.= 5.		CAM.RAD.=	4695.2 KH.			SUN AZH=111.7	
		LAC 26 EUDOXUS,DU ;	>1/2 MOON SPHERE ;				LAC 16 ; LAC 5 PETERMANN, HAYN						& LAC 44 CLEOMEDES,M.C	
L 4	1	92 71.16N	32.23E	17 ***	065357	5-17-67	LUNAR ORB HI, 610MM B&W	-	NONE	3457K	5667213	129	.6 12	-.90
		CAM.HAD.= 71.92N	29.48E		SWING= 306.		PHASE= 79. EMIS.ANG.= 2.		CAM.RAD.=	5196.2 KH.			SUN AZH=127.4	
		LAC 4 METON,DESIT ;	LAC 5 PETERMANN,				LAC 3 PHILOLAUS,B ; LAC 13 ARISTOTE.,M.FRIG						& LAC 1 N.POLE NEARSID	
L 4	2	145 42.34N	33.70W	26 ***	183109	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2868K	35850000	96	2.1 21	-.90
		CAM.HAD.= 42.82N	38.27W		SWING= 260.		PHASE= 75. EMIS.ANG.= 5.		CAM.RAD.=	4607.2 KH.			SUN AZH=109.1	
		LAC 24 SINUS IRID ;	>1/2 MOON SPHERE ;				LAC 74 GRIMALDI,B ; LAC 5 PETERMANN, HAYN						& LAC 14 ENDYMION,STRA	



MIS SION	MAG HOLL	FR,PHOTO OR	PRIN.PT. LAT.	ORB N	GLT TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. M=NM K=KM	T I L T AZ	SUN SIDE. ANG. FR. VERT	ANG. FR. VERT	FWD. LAP S. S
L 4	2	177°	38.81N	67.86E	31	094529	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	5492K 68649999	290	7.6 15	-...	
CAM.NAD.= 33.96N 99.33E SWING= 282. PHASE= 108. EMIS.ANG.= 33. CAM.RAD.= 7231.2 KM. SUN AZM=258.7															
LAC 28 GAUSS, HESSALA, ZENO ; W>1/2 MOON SPHERE ; LAC 61 TARUNTIUS, LYELL ; LAC 99 HUMBOLDT, GIBBS & LAC 5 PETERMANN,															
L 4	1	191	38.30N	53.79E	33	094706	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	5503K 9021311	288	7.7 16	-...	
CAM.NAD.= 33.95N 86.05E SWING= 282. PHASE= 107. EMIS.ANG.= 34. CAM.RAD.= 7242.2 KM. SUN AZM=257.6															
LAC 27 GEMINUS, AT 1 W1/4 MOONS SPHERE ; LAC 4 METON, DESIT ; LAC 5 PETERMANN, HAYN & LAC 61 TARUNTIUS, LYE															
L 4	1	192	38.22N	53.84E	33	094709	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	5504K 9022941	288	7.7 16	-.90	
CAM.NAD.= 33.93N 86.05E SWING= 282. PHASE= 107. EMIS.ANG.= 34. CAM.RAD.= 7243.2 KM. SUN AZM=257.7															
LAC 27 GEMINUS, AT 1 W1/4 MOONS SPHERE ; LAC 4 METON, DESIT ; LAC 5 PETERMANN, HAYN & LAC 61 TARUNTIUS, LYE															
L 5	2	5	59.91N	111.74W	2	112203	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2647K 33087500	286	9.7 8	-...	
CAM.NAD.= 58.97N 81.14W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4386.2 KM. SUN AZM=259.5															
LAC 20 COULUMB ; W>1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PFARY >80 N & LAC 5 PETERMANN, HAY															
L 5	2	6	59.85N	111.66W	2	112205	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2648K 33100000	286	9.7 8	-.90	
CAM.NAD.= 58.94N 81.15W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4387.2 KM. SUN AZM=259.6															
LAC 20 COULUMB ; W>1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PFARY >80 N & LAC 5 PETERMANN, HAY															
L 5	2	7	59.78N	111.58W	2	112208	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2650K 33125000	286	9.7 8	-.90	
CAM.NAD.= 58.91N 81.14W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4389.2 KM. SUN AZM=259.7															
LAC 20 COULUMB ; W>1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PFARY >80 N & LAC 5 PETERMANN, HAY															
L 5	2	8	59.72N	111.50W	2	112211	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2652K 33150000	286	9.6 8	-.90	
CAM.NAD.= 58.88N 81.12W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4391.2 KM. SUN AZM=259.8															
LAC 20 COULUMB ; W>1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PFARY >80 N & LAC 5 PETERMANN, HAY															
L 5	2	9	59.65N	111.42W	2	112214	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2654K 33175000	286	9.6 8	-.90	
CAM.NAD.= 58.85N 81.11W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4393.2 KM. SUN AZM=259.8															
LAC 20 COULUMB ; W>1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PFARY >80 N & LAC 5 PETERMANN, HAY															
L 5	2	10	59.59N	111.34W	2	112216	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2656K 33200000	285	9.6 8	-.90	
CAM.NAD.= 58.82N 81.10W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4395.2 KM. SUN AZM=259.9															
LAC 20 COULUMB ; W>1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PFARY >80 N & LAC 5 PETERMANN, HAY															
L 5	2	11	59.52N	111.27W	2	112219	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2657K 33212500	285	9.6 8	-.90	
CAM.NAD.= 58.79N 81.09W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4396.2 KM. SUN AZM=260.0															
LAC 20 COULUMB ; W>1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PFARY >80 N & LAC 5 PETERMANN, HAY															
L 5	2	12	59.46N	111.19W	2	112222	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2659K 33237500	285	9.6 8	-.90	
CAM.NAD.= 58.75N 81.08W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4398.2 KM. SUN AZM=260.1															
LAC 20 COULUMB ; W>1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PFARY >80 N & LAC 5 PETERMANN, HAY															

TOTAL PHOTOS IN THIS GROUP = 20

ORIGINAL PAGE IS POOR  
REPRODUCIBILITY OF THE

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZINUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EXTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREH; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 !U\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NFG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	PR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORBITER OR LAT. LONG.	GET TIMES-HR M SEC (! = ESTIMATED)	GMT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE SCALE AT T UDE PRIN. AZ ANG. ANG. F.D. M=N.HI PT. FR. LAP K=KM. VERT R, R	SUN SIDE, T I L T ANG. ANG. F.D. FR. LAP VERT R, R
L 4	2	23° 43.72N	99.00E	6 ***	180354	5-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	2983K 37287500	78 1.9 27 -7.0
CAM.NAD.= 43.15N 94.60E SWING= 241. PHASE= 67. EMIS.ANG.= 5. CAM.RAD.= 4722.2 KM. SUN AZM=118.3										
LAC 29 BRUNO FABR ! W>1/2 MOON SPHERE ! LUNAR N. HEMISPHE ! LAC 81 ANSGARIUS, W.M. SHYTHI & LAC 6										
L 4	1	42° 37.09N	84.08E	9 ***	064506	5-13-67	LUNAR ORB HI. 610MM B&W	- NONE	3494K 5727869	108 .8 14 -9.0
CAM.NAD.= 71.60N 84.75E SWING= 357. PHASE= 78. EMIS.ANG.= 2. CAM.RAD.= 5233.2 KM. SUN AZM=130.1										
DEGRADED NEGATIVE ! LAC 5 PETERMANN, ! LAC 6 ! LAC 15 H. HUMBOLDTIANUM & LAC 1 N. POLE NEARSID										
L 4	2	98 40.97N	18.53E	18 ***	181626	5-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	2938K 36725000	118 2.2 23 -2.7
CAM.NAD.= 42.81N 14.21E SWING= 282. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4677.2 KM. SUN AZM=111.3										
LAC 26 EUDOXUS, BU ! W>1/2 MOON SPHERE ! LAC 44 CLEOMEDES, ! LAC 78 THEOPHILUS, KANT & LAC 1 N. POLE NEARSID										
L 4	2	103 41.82N	11.28E	19 ***	061816	5-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	2927K 36587500	107 1.7 22 -0.0
CAM.NAD.= 42.76N 7.57E SWING= 272. PHASE= 72. EMIS.ANG.= 5. CAM.RAD.= 4666.2 KM. SUN AZM=110.7										
LAC 26 EUDOXUS, BURG ! W>1/2 MOON SPHERE ! LAC 1 N. POLE NEARSID BYRD, PEAR6 LAC 6										
L 4	2	123° 1° 13N	162° 38E	22 ***	232754	5-19-67	LUNAR ORB LO.F=80MM B&W	- NONE	6151K 76887499	44 .4 .0 -0.0
CAM.NAD.= .00 161.26E SWING= 64. PHASE= 111. EMIS.ANG.= 2. CAM.RAD.= 7890.2 KM. SUN AZM=271.1										
LAC 67 SPENCER ! LAC 131 PRANDTL ! LAC 6 ! EARTH'S SPHERE & LAC 82 SE. H. SHYTHI, P										
L 4	2	152 69.78N	29.61W	27 ***	071044	5-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	3345K 41812500	142 1.5 13 -9.0
CAM.NAD.= 72.23N 34.79W SWING= 321. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5084.2 KM. SUN AZM=126.4										
LAC 3 PHILULAUS, R ! W>1/2 MOON SPHERE ! LAC 39 ARISTARCHU ! LAC 6 & LAC 15 H. HUMBOLDTIANUM										
L 4	2	170 41.78N	59.60W	30 ***	183518	5-23-67	LUNAR ORB LO.F=80MM B&W	- NONE	2871K 35887500	108 2.2 20 -1.9
CAM.NAD.= 43.00N 64.22W SWING= 271. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4610.2 KM. SUN AZM=107.7										
LAC 23 RUNKER, SHAMP ! W>1/2 MOON SPHERE ! LAC 73 RICCIOLI, NE. ORIENTAL & LAC 6										

TOTAL PHOTOS IN THIS GROUP = 7

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, \$ = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES ; AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+),. , ORIO) = NO INFO \* = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; HAU= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 1/ AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NFG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR,PHOTO OR	PRIN,PT. LAT.	ORB N	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TIDE	SCALE AT PRIN.	AT PT.	T I L T AZ ANG.	SUN SIDE, ANG. FWD.
#	#	MAIN	LONG.		(=ESTIMATED)					M=N.M; K=KM.			FR. VERT	LAP S, R
L 4	2	92	71.17N	32.23E	17 ***	065357	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3457K	43212500	129	.6 12 - .90
CAM.NAD.= 71.92N 29.48E SWING= 306. PHASE= 79. EMIS.ANG.= 2. CAM.RAD.= 5196.2 KM. SUN AZH=127.4														
LAC 4 METON,DESIIT ; LAC 7 KARPINSKY ; LAC 41 APENNINES, ; LAC 44 CLEOMEDES,M.CRIS. 6 LAC 18 TIKHOV														
L 4	2	116	70.80N	4.49E	21 ***	070041	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3397K	42462500	148	.6 12 -, **
CAM.NAD.= 71.88N 2.48E SWING= 326. PHASE= 80. EMIS.ANG.= 2. CAM.RAD.= 5136.2 KM. SUN AZH=124.1														
LAC 3 PHILOLAUS,B ; LAC 7 KARPINSKY ; LAC 41 APENNINES, ; LAC 1 N.POLE NEARSIDE BYRD,PEARY >80 N 6 LAC 17														

TOTAL PHOTOS IN THIS GROUP = 2

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG., B=BRACKET MOUNTED; G, CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUN=MAURER; 2P,2B,2S = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F. OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO! SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG #	FR PHOTO OR #	PRIN.PT. LAT. #	UNB LUNG. #	GET TIMES-HR M SEC (I=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE M=N.M K=KM.	SCALE AT PRIN. PT.	T I L T AZ FR.	SUN SIDE ANG. ANG. VERT	FWD. LAP 8, 9
L 5	1	5	59.69N	111.74W	2 ** ***	112203	8-06-67	LUNAR ORB HI, 610MM B&W	- NONE	2647K	4339344	285	9.7 8	- **
CAM.NAD.= 58.97N 81.16W SWING= 90. PHASE= 107. EMIS.ANG.= 25.														
LAC 20 COULOMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA														
6 LAC 36 RONTGEN LOREN														
L 5	1	6	59.63N	111.66W	2 ** ***	112205	8-06-67	LUNAR ORB HI, 610MM B&W	- NONE	2648K	4340984	285	9.7 8	- .90
CAM.NAD.= 58.94N 81.15W SWING= 90. PHASE= 107. EMIS.ANG.= 25.														
LAC 20 COULOMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA														
6 LAC 36 RONTGEN LOREN														
L 5	1	7	59.56N	111.58W	2 ** ***	112208	8-06-67	LUNAR ORB HI, 610MM B&W	- NONE	2650K	4344242	285	9.7 8	- .90
CAM.NAD.= 58.91N 81.19W SWING= 90. PHASE= 107. EMIS.ANG.= 25.														
LAC 20 COULOMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA														
6 LAC 36 RONTGEN LOREN														
L 5	1	8	59.49N	111.50W	2 ** ***	112211	8-06-67	LUNAR ORB HI, 610MM B&W	- NONE	2652K	4347541	285	9.7 8	- .90
CAM.NAD.= 58.88N 81.13W SWING= 90. PHASE= 107. EMIS.ANG.= 25.														
LAC 20 COULOMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA														
6 LAC 36 RONTGEN LOREN														
L 5	1	9	59.43N	111.43W	2 ** ***	112213	8-06-67	LUNAR ORB HI, 610MM B&W	- NONE	2654K	4350820	285	9.6 8	- .90
CAM.NAD.= 58.85N 81.12W SWING= 89. PHASE= 107. EMIS.ANG.= 25.														
LAC 20 COULOMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA														
6 LAC 36 RONTGEN LOREN														
L 5	1	10	59.37N	111.35W	2 ** ***	112216	8-06-67	LUNAR ORB HI, 610MM B&W	- NONE	2655K	4352459	285	9.6 8	- .90
CAM.NAD.= 58.82N 81.11W SWING= 89. PHASE= 107. EMIS.ANG.= 25.														
LAC 20 COULOMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA														
6 LAC 36 RONTGEN LOREN														
L 5	1	11	59.30N	111.28W	2 ** ***	112219	8-06-67	LUNAR ORB HI, 610MM B&W	- NONE	2657K	4356718	284	9.6 8	- .90
CAM.NAD.= 58.79N 81.10W SWING= 89. PHASE= 107. EMIS.ANG.= 25.														
LAC 20 COULOMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA														
6 LAC 36 RONTGEN LOREN														
L 5	1	12	59.24N	111.20W	2 ** ***	112221	8-06-67	LUNAR ORB HI, 610MM B&W	- NONE	2659K	4359016	284	9.6 8	- .90
CAM.NAD.= 58.76N 81.09W SWING= 89. PHASE= 107. EMIS.ANG.= 25.														
LAC 20 COULOMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA														
6 LAC 36 RONTGEN LOREN														

TOTAL PHOTOS IN THIS GROUP = 8

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S. ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO \* = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G=CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOMER,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 IOR == TWO ZEROS;  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE
SIGN	ROLL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	ANG. ANG. FWD.
#	#	MAIN	LONG.		(ESTIMATED)			TYPE		M=N.MI K=KM.	PT. VERT	FR. LAP
L 4	1	190	70.34N 63.47W	33	***	071553	5-25-67	LUNAR ORB HI. 610MM R6W	- NONE	3373K	5529508	125 1.9 14 -.48
CAM.NAD.= 72.71N 72.45W SWING= 306. PHASE= 82. EMIS.ANG.= 6. CAM.RAD.= 5112.2 KM. SUN AZM=129.2												
LAC 2 ANAKIMENES,PASCAL ; LAC 10 BABBAGE,N.PROCELARN. ; LAC 3 PHILOLAUS,BARROW & LAC 9 CREMONA												
L 5	1	5	59.69N 111.74W	2	***	112203	8-06-67	LUNAR ORB HI. 610MM R6W	- NONE	2647K	4339344	285 9.7 8 -.00
CAM.NAD.= 58.97N 81.16W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4386.2 KM. SUN AZM=259.5												
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN												
L 5	1	6	59.63N 111.66W	2	***	112205	8-06-67	LUNAR ORB HI. 610MM R6W	- NONE	2648K	4340984	285 9.7 8 -.90
CAM.NAD.= 58.94N 81.15W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4387.2 KM. SUN AZM=259.6												
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN												
L 5	1	7	59.56N 111.58W	2	***	112208	8-06-67	LUNAR ORB HI. 610MM R6W	- NONE	2650K	4344262	285 9.7 8 -.90
CAM.NAD.= 58.91N 81.14W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4389.2 KM. SUN AZM=259.7												
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN												
L 5	1	8	59.49N 111.50W	2	***	112211	8-06-67	LUNAR ORB HI. 610MM R6W	- NONE	2652K	4347541	285 9.7 8 -.90
CAM.NAD.= 58.88N 81.13W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4391.2 KM. SUN AZM=259.8												
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN												
L 5	1	9	59.43N 111.43W	2	***	112213	8-06-67	LUNAR ORB HI. 610MM R6W	- NONE	2654K	4350820	285 9.6 8 -.90
CAM.NAD.= 58.85N 81.12W SWING= 89. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4393.2 KM. SUN AZM=259.9												
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN												
L 5	1	10	59.37N 111.35W	2	***	112216	8-06-67	LUNAR ORB HI. 610MM R6W	- NONE	2655K	4352459	285 9.6 8 -.90
CAM.NAD.= 58.82N 81.11W SWING= 89. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4394.2 KM. SUN AZM=259.9												
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN												
L 5	1	11	59.31N 111.28W	2	***	112219	8-06-67	LUNAR ORB HI. 610MM R6W	- NONE	2657K	4355738	284 9.6 8 -.90
CAM.NAD.= 58.79N 81.10W SWING= 89. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4396.2 KM. SUN AZM=260.0												
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN												
L 5	1	12	59.24N 111.20W	2	***	112221	8-06-67	LUNAR ORB HI. 610MM R6W	- NONE	2659K	4359016	284 9.6 8 -.90
CAM.NAD.= 58.76N 81.09W SWING= 89. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4398.2 KM. SUN AZM=260.1												
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN												

9

LAC 9 CREMONA

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MIS MAG FR, PHOTO PRIN. PT. ORB		GEI	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	TILT	SUN SIZE
SION ROLL	OR	LAT.	#	TIMES-HR M SEC	SENSOR	AND FILTER	TUDE PRIN.	AZ ANG.	ANG. FWD.
#	#	MAIN	LONG.	(I=ESTIMATED)	TYPE		M=N, MI PT.	FR.	LAP
							K=KH.	VERT	S. S.

TOTAL PHOTOS IN THIS GROUP = 9

10

LAC 10 BABBAGE, N. PROCELARM.

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), (O) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 16. AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NFG. AT PP IF ALT NOT 0.

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T I L T	SUN SIDE
SION ROLL	OR	LAT.	"	"	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD
"	"	MAIN	LUNG.	(ESTIMATED)				TYPE		M=N.MI	PT.	FR.	LA
"	"	"	"	"	"	"	"	"	"	K=KM.	"	VERT	R.
L 4	2	126	12.07N	23.05W	23	000	055348	5-20-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2677K	33462500	238 1.3 20 -.
		CAM.NAD.= 13.94N	21.27W		SWING= 53.		PHASE= 68.	EMIS.ANG.= 3.	CAM.RAD.=	4416.2 KM.			SUN AZM= 94.0
		LAC 58 COPERNICUS, REINHOLD					W>1/2 MOON SPHERE			LAC 111 WILHELM, ELGER, MEE			LAC 10 BABBAGE, N. PR
L 4	2	144	14.04N	41.77W	26	000	175854	5-21-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2669K	33362500	280 .5 19 -.
		CAM.NAD.= 13.96N	41.01W		SWING= 94.		PHASE= 70.	EMIS.ANG.= 1.	CAM.RAD.=	4408.2 KM.			SUN AZM= 94.3
		LAC 57 KEPLER, ENC					W>1/2 MOON SPHERE			LAC 92 BYRGILUS, DA			LAC 26 EUDOXUS, RUNG
L 4	2	157	13.36N	56.27W	28	000	180116	5-22-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2669K	33362500	255 1.4 17 -.
		CAM.NAD.= 13.91N	54.17W		SWING= 69.		PHASE= 70.	EMIS.ANG.= 3.	CAM.RAD.=	4408.2 KM.			SUN AZM= 93.4
		LAC 56 HEVELIUS, K					W>1/2 MOON SPHERE			LAC 92 BYRGILUS, DA			LAC 25 CASSINI, ALPS
L 4	1	163	41.21N	53.38W	29	000	063426	5-23-67 LUNAR ORB HI. 610MM B&W	-	NONE	2867K	4700000	115 2.2 20 -.
		CAM.NAD.= 42.87N	57.71W		SWING= 279.		PHASE= 76.	EMIS.ANG.= 6.	CAM.RAD.=	4606.2 KM.			SUN AZM= 107.7
		CENTRAL PART OF LAC 23 RUMKER, SHARP								LAC 11 J.HERSCHEL, J			NORTHERN PART OF LAC 38 SELEUCUS, SC
L 4	1	164	70.19N	41.50W	29	000	071247	5-23-67 LUNAR ORB HI. 610MM B&W	-	NONE	3346K	5485246	136 1.4 13 -.
		CAM.NAD.= 72.26N	47.11W		SWING= 313.		PHASE= 81.	EMIS.ANG.= 4.	CAM.RAD.=	5085.2 KM.			SUN AZM= 126.8
		LAC 2 ANAXIMENES, PASCAL								LAC 3 PHILOLAUS, BARROW			LAC 11 J.HERSCHEL, J
L 4	1	170	41.77N	59.60W	30	000	183518	5-23-67 LUNAR ORB HI. 610MM B&W	-	NONE	2871K	4706557	108 2.2 20 -.
		CAM.NAD.= 43.00N	64.22W		SWING= 271.		PHASE= 76.	EMIS.ANG.= 6.	CAM.RAD.=	4610.2 KM.			SUN AZM= 107.7
		LAC 23 RUMKER, SHARP								LAC 22 SE. GERARD, BUNSEN, HARDING			LAC 11 J.HERSCHEL, J
L 4	1	175	41.29N	66.78W	31	000	063541	5-24-67 LUNAR ORB HI. 610MM B&W	-	NONE	2872K	4708197	116 2.0 19 -.
		CAM.NAD.= 42.86N	70.79W		SWING= 280.		PHASE= 76.	EMIS.ANG.= 5.	CAM.RAD.=	4611.2 KM.			SUN AZM= 106.8
		LAC 22 SE. GERARD, BUNSEN, HARDING								LAC 23 RUMKER, SHARP			LAC 11 J.HERSCHEL, J
L 4	1	176	69.97N	54.78W	31	000	071413	5-24-67 LUNAR ORB HI. 610MM B&W	-	NONE	3354K	5498361	142 1.5 13 -.
		CAM.NAD.= 72.28N	59.77W		SWING= 320.		PHASE= 81.	EMIS.ANG.= 4.	CAM.RAD.=	5093.2 KM.			SUN AZM= 125.7
		LAC 2 ANAXIMENES, PASCAL								LAC 3 PHILOLAUS, BARROW			LAC 11 J.HERSCHEL, J
L 4	1	183	43.53N	71.02W	32	000	183607	5-24-67 LUNAR ORB HI. 610MM B&W	-	NONE	2874K	4711475	79 2.8 20 -.
		CAM.NAD.= 42.84N	77.39W		SWING= 243.		PHASE= 77.	EMIS.ANG.= 8.	CAM.RAD.=	4613.2 KM.			SUN AZM= 108.9
		EASTERN PART OF LAC 22 SE. GERARD, BUNSEN, HARDING								LAC 23 RUMKER, SHA			LAC 37 STRUVE, DALTON

REPRODUCTION OF THE  
 ORIGINAL IS POOR

THIS MAG FR. PHOTO PRIN. PT. ORB															GET GMT		M-DA-YR		CAMERA-LENS OR		FILM-EXPOSURE		ALTI SCALE AT		T I L Y		SUN SIDE.	
SUN HULL		OR LAT.		N		TIMES-HR H SEC				SENSOR		AND FILTER		TUDE PRIN.		AZ ANG.		FWD.										
#		#		MAIN		LONG.		(ESTIMATED)		TYPE				M=N.MI K=KM.		PT.		FR.										
L 4	1	189	41.71N	79.99W	33	00	0000	063636	5-25-67	LUNAR ORB HI.	610MM A&W	-	NONE	2978K	4718033	110	1.9	18	-77									
		CAM-RA.D.= 42.88N		84.00W		SWING= 273.		PHASE= 77.		EMIS-ANG.= 5.				CAM-RA.D.= 4617.2 KM.		SUN		AZM=106.1										
		WESTERN PART OF		LAC 22 SE. GERARD, BUNSEN, HAWDING						1 LAC 21 N. GERARD, B		6 LAC 10 BABBAGE, N. PROCELARM.																
L 4	1	190	70.34N	63.47W	33	00	0000	071553	5-25-67	LUNAR ORB HI.	610MM B&W	-	NONE	3373K	5529508	125	1.9	14	-48									
		CAM-RA.D.= 72.71N		72.45W		SWING= 306.		PHASE= 82.		EMIS-ANG.= 6.				CAM-RA.D.= 5112.2 KM.		SUN		AZM=129.2										
		LAC 2 ANAXIMENES, PASCAL								1 LAC 10 BABBAGE, N. PROCELARM.		1 LAC 3 PHILOLAUS, BARROW						6 LAC 9 CREMONA										
TOTAL PHOTOS IN THIS GROUP = 11																												



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+), ( ), OR(O) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED! G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS! EKT=EKTAR 2.8 LENS!  
 HSB= HASSELBLADT MAUR= MAUREK! ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONNAR)! FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEHOS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO! SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.

MIS SIGN	MAG	FR,PHOTO OR	PRIN.PT. LAT.	ORB LONG.	GET TIMES-HR M SEC (!=ESTIMATED)	GMT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TIDE M=N.HI K=KM.	SCALE AT PRIN. PT.	T I L T AZ FR. VERT	SUN SIDE, ANG. ANG. FR. ANG. FR. ANG. FR.	SUN AZM FR. ANG. FR. ANG. FR.	SIDE, FWD LA S.
L 4	2	121	13.81N	16.80W	22 ***	0000 175143	5-19-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2682K	33525000	268	1.3 20	-0.6
CAM.NAD.= 13.87N 14.69W SWING= 83. PHASE= 67. EMIS.ANG.= 3. CAM.RAD.= 4421.2 KM. SUN AZM= 94.4														
LAC 58 COPERNICUS,REINHOLD ; W>1/2 MOON SPHERE ; LAC 111 WILHELM.E ; LAC 96 ALTAI SCA ; LAC 11 J.HER & LAC 27 GEMIN														
L 4	1	128	69.92N	9.43W	23 **	0000 070417	5-20-67 LUNAR ORB HI. 610MM B&W	-	NONE	3369K	5522951	171	1.0 12	-0.1
CAM.NAD.= 71.89N 10.32W SWING= 347. PHASE= 80. EMIS.ANG.= 3. CAM.RAD.= 5108.2 KM. SUN AZM= 122.3														
LAC 3 PHILOLAUS,B ; LAC 4 METON,DESIT ; LAC 12 PLATO,ALPI ; LAC 11 J.HERSCHEL,JURAS,BOUGUER & LAC 2 ANAXIMENES,PAS														
L 4	2	138	13.71N	36.45W	25 ***	0000 055724	5-21-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2671K	33387500	263	1.3 18	-0.6
CAM.NAD.= 13.92N 34.43W SWING= 78. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4410.2 KM. SUN AZM= 94.0														
LAC 57 REPLER,ENC ; W>1/2 MOON SPHERE ; LAC 110 SCHICKARD ; LAC 11 J.HERSCHEL,JURAS,BOUGUER & LAC 26 EUDOKUS,BURG														
L 4	1	139	42.16N	28.25W	25 ***	0000 062940	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	2872K	4708197	102	1.6 20	-0.7
CAM.NAD.= 42.81N 31.79W SWING= 267. PHASE= 74. EMIS.ANG.= 4. CAM.RAD.= 4411.2 KM. SUN AZM= 108.6														
CENTRAL PART OF LAC 24 SINUS IRID ; LAC 11 J.HERSCHEL,JURAS,BOUGUER & LAC 12 PLATO,ALPINE VAL.														
L 4	1	140	71.05N	16.31W	25 ***	0000 070801	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	3355K	5500000	117	1.2 13	-0.2
CAM.NAD.= 72.21N 22.53W SWING= 297. PHASE= 81. EMIS.ANG.= 3. CAM.RAD.= 5094.2 KM. SUN AZM= 127.7														
LAC 3 PHILOLAUS,BARRON ; LAC 11 J.HERSCHEL,JURAS,BOUGUER ; LAC 12 PLATO,ALPINE VAL. & LAC 4 METON,DESITTE														
L 4	1	145	42.33N	33.70W	26 ***	0000 183109	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	2868K	4701639	96	2.1 21	-0.7
CAM.NAD.= 42.81N 38.27W SWING= 260. PHASE= 75. EMIS.ANG.= 5. CAM.RAD.= 4407.2 KM. SUN AZM= 109.1														
WESTERN PART OF LAC 24 SINUS IRIDUM ; LAC 23 RUMKER,SHA & LAC 11 J.HERSCHEL,JURAS,BOUGUER														
L 4	2	150	12.7JN	49.29W	27 ***	0000 060312	5-22-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2668K	33350000	234	1.3 18	-0.1
CAM.NAD.= 13.91N 47.59W SWING= 48. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 4407.2 KM. SUN AZM= 93.5														
LAC 57 REPLER,ENC ; W>1/2 MOON SPHERE ; LAC 92 BYRGIUS,DA ; LAC 11 J.HERSCHEL,JURAS,BOUGUER & LAC 58 COPERNICUS,RE														
L 4	1	151	40.88N	40.20W	27 ***	0000 063228	5-22-67 LUNAR ORB HI. 610MM B&W	-	NONE	2866K	4698361	118	2.4 21	-0.7
CAM.NAD.= 42.84N 44.74W SWING= 282. PHASE= 75. EMIS.ANG.= 6. CAM.RAD.= 4405.2 KM. SUN AZM= 108.3														
EASTERN PART OF LAC 23 RUMKER,SHARP ; LAC 24 SINUS IRID & LAC 11 J.HERSCHEL,JURAS,BOUGUER														
L 4	1	152	69.78N	29.61W	27 ***	0000 071044	5-22-67 LUNAR ORB HI. 610MM B&W	-	NONE	3345K	5483607	142	1.5 13	-0.15
CAM.NAD.= 72.22N 34.79W SWING= 321. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5084.2 KM. SUN AZM= 126.4														
LAC 3 PHILOLAUS,BARRON ; LAC 2 ANAXIMENES,PASCAL ; LAC 11 J.HERSCHEL,JURAS,BOUGUER & LAC 1 N.POLE NEARSI														

MIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	TILT	SUN SIDE	
SION	NULL	OR	LAT.	M	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	
"	"	MAIN	LONG.		(ESTIMATED)			TYPE		M=N.MI	PT.	FR.	ANG.	
										K=KM.		VERT	8.	
L 4	1	163	41.21N	53.38W	29	000	063426	5-23-67 LUNAR ORB HI. 610MM B&W	-	NONE	2467K	4700000	115	2.2 20
CAM.NAD.= 42.87N 57.71W SWING= 279. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4606.2 KM. SUN AZM=107.7														
CENTRAL PART OF LAC 23 RUMKER, SHARP ; LAC 10 BABBAGE, N. PR I LAC 11 J.HERSCHEL, J & NORTHERN PART OF LAC 38 SELEUCUS, SCH														
L 4	1	164	70.19N	41.50W	29	000	071247	5-23-67 LUNAR ORB HI. 610MM B&W	-	NONE	3346K	5485246	136	1.4 13
CAM.NAD.= 72.26N 47.11W SWING= 313. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5085.2 KM. SUN AZM=126.8														
LAC 2 ANAXIMENES, PASCAL ; LAC 3 PHILOLAUS, HARROW ; LAC 10 BABBAGE, N. PROCELARM. & LAC 11 J.HERSCHEL, J														
L 4	1	170	41.77N	59.60W	30	000	183518	5-23-67 LUNAR ORB HI. 610MM B&W	-	NONE	2871K	4706557	108	2.2 20
CAM.NAD.= 43.00N 64.22W SWING= 271. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4610.2 KM. SUN AZM=107.7														
LAC 23 RUMKER, SHARP ; LAC 22 SE.GERARD, BUNSEN, HARDING ; LAC 10 BABBAGE, N. PROCELARM. & LAC 11 J.HERSCHEL, J														
L 4	1	175	41.29N	66.78W	31	000	063541	5-24-67 LUNAR ORB HI. 610MM B&W	-	NONE	2872K	4708197	116	2.0 19
CAM.NAD.= 42.86N 70.79W SWING= 280. PHASE= 76. EMIS.ANG.= 5. CAM.RAD.= 4611.2 KM. SUN AZM=106.8														
LAC 22 SE.GERARD, BUNSEN, HARDING ; LAC 23 RUMKER, SHARP ; LAC 10 BABBAGE, N. PROCELARM. & LAC 11 J.HERSCHEL, J														
L 4	1	176	69.97N	54.78W	31	000	071413	5-24-67 LUNAR ORB HI. 610MM B&W	-	NONE	3354K	5498361	142	1.5 13
CAM.NAD.= 72.28N 59.77W SWING= 320. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5093.2 KM. SUN AZM=125.7														
LAC 2 ANAXIMENES, PASCAL ; LAC 3 PHILOLAUS, HARROW ; LAC 10 BABBAGE, N. PROCELARM. & LAC 11 J.HERSCHEL, J														
L 4	1	183	43.53N	71.02W	32	000	183607	5-24-67 LUNAR ORB HI. 610MM B&W	-	NONE	2874K	4711475	79	2.8 20
CAM.NAD.= 42.84N 77.39W SWING= 243. PHASE= 77. EMIS.ANG.= 8. CAM.RAD.= 4613.2 KM. SUN AZM=108.9														
EASTERN PART OF LAC 22 SE.GERARD, BUNSEN, HARDING ; LAC 23 RUMKER, SHA & LAC 37 STRUVE, DALTON														

TOTAL PHOTOS IN THIS GROUP = 15

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; 2P, 28, 25 = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR == TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

HIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE.	
SUN	ROLL	OR	LAT.				TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.		AZ	ANG.	FAD.	
#	#	MAIN	LONG.				(ESTIMATED)			TYPE		M=N.MI	PT.		FR.	LAP		
												K=KM.			VERT	R. R		
L 4	2	97°	12.97N	9.65E	18	***	0000	174320	5-17-67	LUNAR ORB	LO.F=80MM B6W	-	NONE	2705K	338125ND	245	1.4 22	-.50
		CAM.NAD.=	13.9UN	11.76E			SWING=	60.		PHASE=	65.	EMIS.ANG.=	4.	CAM.RAD.=	4444.2 KM.		SUN AZM=94.7	
		LAC 59	M.VAPORUM, HYGINUS														LAC 80 LANGRENU, M.FERT.	
																	LAC 114 RHEITA, JA	
L 4	1	104	70.35N	18.1NE	19	***	0000	065708	5-18-67	LUNAR ORB	HI. 610MM B6W	-	NONE	3428K	3619672	153	.9 12	-.1
		CAM.NAD.=	71.87N	15.88E			SWING=	330.		PHASE=	80.	EMIS.ANG.=	3.	CAM.RAD.=	5167.2 KM.		SUN AZM=125.4	
		LAC 4	METON, DESIT														LAC 3 PHILOLAUS, B	
																	LAC 13 ARISTOTE.,	
																	LAC 12 PLATO, ALPINE VAL.	
L 4	2	109	13.79N	3.58W	20	***	0000	174732	5-18-67	LUNAR ORB	LO.F=80MM B6W	-	NONE	2693K	336625ND	267	1.3 21	-.67
		CAM.NAD.=	13.89N	1.48W			SWING=	82.		PHASE=	66.	EMIS.ANG.=	3.	CAM.RAD.=	4432.2 KM.		SUN AZM=94.7	
		LAC 59	M.VAPORUM, HYGINUS														LAC 12 PLATO, ALPINE VAL.	
																	LAC 61 TARANTULUS, LY	
L 4	1	110	42.59N	3.35E	20	***	0000	182013	5-18-67	LUNAR ORB	HI. 610MM B6W	-	NONE	2916K	4780328	94	1.1 21	-.72
		CAM.NAD.=	42.77N	0.86E			SWING=	259.		PHASE=	72.	EMIS.ANG.=	3.	CAM.RAD.=	4655.2 KM.		SUN AZM=109.6	
		EASTERN PART OF	LAC 25	CASSINI, ALP													LAC 26 EUFOXUS, BUR	
																	LAC 12 PLATO, ALPI	
																	LAC 13 ARISTOTE., M.FRIG	
L 4	2	114	13.47N	10.97W	21	***	0000	054938	5-19-67	LUNAR ORB	LO.F=80MM B6W	-	NONE	2687K	33587500	261	1.8 19	-.64
		CAM.NAD.=	13.89N	8.09W			SWING=	77.		PHASE=	66.	EMIS.ANG.=	5.	CAM.RAD.=	4426.2 KM.		SUN AZM=94.2	
		LAC 58	COPERNICUS, REINHOLD														LAC 111 WILHELM, E	
																	LAC 12 PLATO, ALP	
																	LAC 26 EUFOX & LAC 96 ALTAI	
L 4	1	115	42.27N	2.67W	21	***	0000	062212	5-19-67	LUNAR ORB	HI. 610MM B6W	-	NONE	2905K	4762295	101	1.4 21	-.78
		CAM.NAD.=	42.76N	5.70W			SWING=	267.		PHASE=	73.	EMIS.ANG.=	4.	CAM.RAD.=	4694.2 KM.		SUN AZM=109.5	
		LAC 25	CASSINI, AL														LAC 12 PLATO, ALPI	
																	LAC 13 ARISTOTE.,	
																	LAC 40 TIMOCHARIS, LAMBERT	
																	LAC 41 APENNINES, HAE	
L 4	1	116	70.8UN	4.49E	21	***	0000	070041	5-19-67	LUNAR ORB	HI. 610MM B6W	-	NONE	3397K	5568852	148	.6 12	-.6
		CAM.NAD.=	71.88N	2.48E			SWING=	326.		PHASE=	80.	EMIS.ANG.=	2.	CAM.RAD.=	5136.2 KM.		SUN AZM=124.1	
		LAC 3	PHILOLAUS, B														LAC 4 METON, DESIT	
																	LAC 12 PLATO, ALPI	
																	LAC 13 ARISTOTE., M.FRIG	
																	LAC 1 N.POLE NEARSID	
L 4	1	122	42.07N	9.24W	22	***	0000	182411	5-19-67	LUNAR ORB	HI. 610MM B6W	-	NONE	2895K	4746902	105	1.4 21	-.77
		CAM.NAD.=	42.76N	12.27W			SWING=	270.		PHASE=	73.	EMIS.ANG.=	4.	CAM.RAD.=	4634.2 KM.		SUN AZM=109.1	
		WESTERN PART OF	LAC 25	CASSINI, ALP													LAC 24 SINUS IRIDU	
																	LAC 12 PLATO, ALPI	
																	LAC 40 TIMOCHARIS, LAMBERT	
																	LAC 41 APENNINE	
L 4	1	127	41.2LN	14.29W	23	***	0000	062610	5-20-67	LUNAR ORB	HI. 610MM B6W	-	NONE	2886K	4731148	114	2.2 22	-.77
		CAM.NAD.=	42.8UN	18.79W			SWING=	278.		PHASE=	74.	EMIS.ANG.=	6.	CAM.RAD.=	4625.2 KM.		SUN AZM=109.6	
		EASTERN PART OF	LAC 24	SINUS IRID													LAC 25 CASSINI, AL	
																	LAC 12 PLATO, ALPINE VAL.	
																	LAC 40 TIMOCHARIS, LA	

MIS SION	MAG ROLL	FR. OR MAIN	PHOTO LAT.	PRIN. PT. LONG.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN. PT.	AT AZ	T ANG.	L ANG.	SUN FWD. LAP	SIDE, ANG. FR. VERT
L 4	1	128	69.92N	9.43W	23	***	070417	5-20-67	LUNAR ORB HI. 610MM B&W	- NONE	3369K	5522951	171	1.0	12	-	9
CAM.NAD.= 71.89N 10.32W SWING= 347. PHASE= 80. EMIS.ANG.= 3. CAM.RAD.= 5108.2 KM. SUN AZH=122.3																	
LAC 3 PHILOLAUS, B I LAC 4 METON, DESIT I LAC 12 PLATO, ALPI I LAC 11 J.HERSCHEL, JURAS, ROUGUER 6 LAC 2 ANAXIMENES, PAS																	
L 4	1	134	46.31N	18.14W	24	***	182759	5-20-67	LUNAR ORB HI. 610MM B&W	- NONE	2878K	4718033	53	3.7	21	-	26
CAM.NAD.= 42.8UN 25.30W SWING= 218. PHASE= 74. EMIS.ANG.= 10. CAM.RAD.= 4617.2 KM. SUN AZH=113.2																	
EASTERN PART OF LAC 24 SINUS IRIDU I LAC 25 CASSINI, ALP I LAC 12 PLATO, ALPI I LAC 40 TIMOCHARIS, LAMBERT 6 LAC 3 PHILOLAUS,																	
L 4	1	139	42.16N	28.25W	25	***	062940	5-21-67	LUNAR ORB HI. 610MM B&W	- NONE	2872K	4708197	102	1.6	20	-	78
CAM.NAD.= 42.81N 31.79W SWING= 267. PHASE= 74. EMIS.ANG.= 4. CAM.RAD.= 4611.2 KM. SUN AZH=108.6																	
CENTRAL PART OF LAC 24 SINUS IRID I LAC 11 J.HERSCHEL, JURAS, BOUGUER 6 LAC 12 PLATO, ALPINE VAL.																	
L 4	1	140	71.05N	16.31W	25	***	070801	5-21-67	LUNAR ORB HI. 610MM B&W	- NONE	3355K	5500000	117	1.2	13	-	22
CAM.NAD.= 72.21N 22.53W SWING= 297. PHASE= 81. EMIS.ANG.= 3. CAM.RAD.= 5094.2 KM. SUN AZH=127.7																	
LAC 3 PHILOLAUS, BARROW I LAC 11 J.HERSCHEL, JURAS, BOUGUER I LAC 12 PLATO, ALPINE VAL. 6 LAC 4 METON, DESITTE																	
L 4	1	145	42.33N	33.70W	26	***	183109	5-21-67	LUNAR ORB HI. 610MM B&W	- NONE	2868K	4701639	96	2.1	21	-	70
CAM.NAD.= 42.81N 38.27W SWING= 260. PHASE= 75. EMIS.ANG.= 5. CAM.RAD.= 4607.2 KM. SUN AZH=109.1																	
WESTERN PART OF LAC 24 SINUS IRIDUM I LAC 23 RUMKER, SHA 6 LAC 11 J.HERSCHEL, JURAS, ROUGUER																	
L 4	2	163	41.22N	53.38W	29	***	063426	5-23-67	LUNAR ORB LO.F=80MM B&W	- NONE	2867K	35837500	115	2.2	20	-	00
CAM.NAD.= 42.87N 57.71W SWING= 279. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4606.2 KM. SUN AZH=107.7																	
LAC 23 RUMKER, SHARP I 0>1/2 MOON SPHERE I LAC 73 RICCIOLI, NE. ORIENTAL 6 LAC 1 N. POLE NEARS I																	
L 4	2	169	13.70N	68.49W	30	***	180302	5-23-67	LUNAR ORB LO.F=80MM B&W	- NONE	2672K	33400000	248	.8	17	-	78
CAM.NAD.= 14.14N 67.33W SWING= 62. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 4411.2 KM. SUN AZH= 93.5																	
LAC 56 HEVELIUS, R I 0>1/2 MOON SPHERE I LAC 109 PIAZZI, V. I LAC 21 N. GERARD, BOOLE 6 LAC 12 PLATO, ALPINE																	
L 4	2	175	41.29N	66.78W	31	***	063541	5-24-67	LUNAR ORB LO.F=80MM B&W	- NONE	2872K	35900000	116	2.0	19	-	90
CAM.NAD.= 42.86N 70.79W SWING= 279. PHASE= 76. EMIS.ANG.= 5. CAM.RAD.= 4611.2 KM. SUN AZH=106.8																	
LAC 22 SE. GERARD, BUNSEN, HARDING I 0>1/2 MOON SPHERE I LAC 73 RICCIOLI, NE. ORIENTAL 6 LAC 1 N. POLE NEARS I																	
L 4	2	183	43.53N	71.02W	32	***	183607	5-24-67	LUNAR ORB LO.F=80MM B&W	- NONE	2874K	35925000	79	2.8	20	-	90
CAM.NAD.= 42.84N 77.39W SWING= 242. PHASE= 77. EMIS.ANG.= 8. CAM.RAD.= 4613.2 KM. SUN AZH=108.9																	
LAC 24 SE. GERARD, BUNSEN, HARDING I 0>1/2 MOON SPHERE I LAC 90 LOWELL 6 LAC 1 N. POLE NEARS I																	
L 4	2	189	41.72N	79.99W	33	***	063636	5-25-67	LUNAR ORB LO.F=80MM B&W	- NONE	2878K	35975000	110	1.9	18	-	00
CAM.NAD.= 42.88N 84.00W SWING= 273. PHASE= 77. EMIS.ANG.= 5. CAM.RAD.= 4617.2 KM. SUN AZH=106.1																	
LAC 22 SE. GERARD, BUNSEN, HARDING I 0>1/2 MOON SPHERE I LAC 108 M. ORIENTAL (SW 1/3 0) 6 LAC 1 N. POLE NEARS I																	
L 5	1	102	48.22N	1.08E	49	***	093823	8-14-67	LUNAR ORB HI. 610MM B&W	- NONE	250K	409836	240	34.0	12	-	00
CAM.NAD.= 51.29N 8.67E SWING= 178. PHASE= 54. EMIS.ANG.= 40. CAM.RAD.= 1989.2 KM. SUN AZH=101.8																	
S. E. PART OF LAC 12 PLATO, ALPINE VAL. 6 NORTHERN PART OF LAC 25 CASSINI, ALPS MTS																	
L 5	2	102	48.21N	1.04E	49	***	093823	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	250K	3125000	240	34.1	12	-	00
CAM.NAD.= 51.30N 8.67E SWING= 178. PHASE= 54. EMIS.ANG.= 40. CAM.RAD.= 1989.2 KM. SUN AZH=101.8																	
SOUTHERN PART OF LAC 12 PLATO, ALPINE VAL. I NORTHERN PART OF LAC 25 CASSINI, AL 6 N. E. PART OF LAC 24 SINUS IRIDUM																	

## LAC 12 PLATO-ALPINE VAL.

MIS SION	MAG ROLL	FR-PRIN. OR LAT.	PHOTO LAT.	PRIN. LONG.	PT. ORB	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=NM K=KM.	AT PT.	TILT AZ	SUN SIDE ANG. FR. VERT	ANG. FR. VERT	PHASE
L 5	1	129	48.68N	2.89W	S6 ***	075437	8-15-67	LUNAR	ORB HI. 610MM B&W	- NONE	233K	381967	45	7.0	17	-0.4
CAM-NAD.= 48.30N 4.19W SWING= 328. PHASE= 79. EMIS.ANG.= 8. CAM-RAD.= 1972.2 KM. SUN AZH=107.7																
SOUTHERN PART OF LAC 12 PLATO, ALPINE VAL.																
L 5	2	129	48.69N	2.92W	S6 ***	075437	8-15-67	LUNAR	ORB LO.F=80MM B&W	- NONE	233K	2912500	65	6.9	17	-0.0
CAM-NAD.= 48.30N 4.19W SWING= 328. PHASE= 79. EMIS.ANG.= 8. CAM-RAD.= 1972.2 KM. SUN AZH=107.7																
SOUTHERN PART OF LAC 12 PLATO, ALPINE VAL.																
L 5	1	130	49.31N	2.74W	S6 ***	075440	8-15-67	LUNAR	ORB HI. 610MM B&W	- NONE	236K	386885	62	7.3	17	-0.0
CAM-NAD.= 48.86N 4.09W SWING= 325. PHASE= 79. EMIS.ANG.= 8. CAM-RAD.= 1975.2 KM. SUN AZH=108.0																
SOUTHERN PART OF LAC 12 PLATO, ALPINE VAL.																
L 5	2	130	49.33N	2.76W	S6 ***	075449	8-15-67	LUNAR	ORB LO.F=80MM B&W	- NONE	236K	2950000	61	7.2	17	-0.8
CAM-NAD.= 48.86N 4.09W SWING= 324. PHASE= 79. EMIS.ANG.= 8. CAM-RAD.= 1975.2 KM. SUN AZH=108.0																
SOUTHERN PART OF LAC 12 PLATO, ALPINE VAL.																
L 5	1	131	49.96N	2.58W	S6 ***	075500	8-15-67	LUNAR	ORB HI. 610MM B&W	- NONE	239K	391803	58	7.6	17	-0.0
CAM-NAD.= 49.42N 3.99W SWING= 321. PHASE= 79. EMIS.ANG.= 9. CAM-RAD.= 1978.2 KM. SUN AZH=108.4																
SOUTHERN PART OF LAC 12 PLATO, ALPINE VAL.																
L 5	2	131	49.98N	2.60W	S6 ***	075500	8-15-67	LUNAR	ORB LO.F=80MM B&W	- NONE	239K	2987500	57	7.6	17	-0.8
CAM-NAD.= 49.43N 3.98W SWING= 320. PHASE= 79. EMIS.ANG.= 9. CAM-RAD.= 1978.2 KM. SUN AZH=108.3																
SOUTHERN PART OF LAC 12 PLATO, ALPINE VAL.																
L 5	1	132	50.62N	2.41W	S6 ***	075512	8-15-67	LUNAR	ORB HI. 610MM B&W	- NONE	243K	398361	55	8.0	17	-0.8
CAM-NAD.= 50.00N 3.88W SWING= 318. PHASE= 79. EMIS.ANG.= 9. CAM-RAD.= 1982.2 KM. SUN AZH=108.7																
S. E. PART OF LAC 12 PLATO, ALPINE VAL.																
L 5	2	132	50.64N	2.43W	S6 ***	075512	8-15-67	LUNAR	ORB LO.F=80MM B&W	- NONE	243K	3037500	54	7.9	17	-0.8
CAM-NAD.= 50.00N 3.87W SWING= 317. PHASE= 79. EMIS.ANG.= 9. CAM-RAD.= 1982.2 KM. SUN AZH=108.7																
SOUTHERN PART OF LAC 12 PLATO, ALPINE VAL.																
6 NORTHERN PART OF LAC 25 CASSINI, ALPS MTS																

TOTAL PHOTOS IN THIS GROUP = 29

REPRODUCTION OF THE  
PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEANS: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+), ( ), OR(O) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREN; 2P,2B,2S = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS;  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO! SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXP.	ALTI	SCALE	AT	T I L T	SUN	SIDE	
SION	ROLL	OR	LAT.	N	TIMES-HR	M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	MAIN	LONG.	(I=ESTIMATED)						TYPE		M=N.MI	PT.	FR.	VERI	X. Y.		
L 4	2	78°	13.30N	30.21E	15	00	053813	5-16-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	2722K	34025000	248	1.0	24	-0.76
CAM.NAD.= 13.87N 31.68E SWING= 63. PHASE= 64. EMIS.ANG.= 3. CAM.RAD.= 4461.2 KM. SUN AZM= 95.4																		
LAC 61 TARUNTIUS,LYELL ; W>1/2 MOON SPHERE ; LAC 13 ARISTOTE., ; LAC 62 M.UNDARUM,S.CRISIUM ; LAC 113 MAUROLYCUS																		
L 4	1	79°	41.83N	39.05E	15	00	061131	5-16-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2964K	4859016	103	2.1	25	-0.90
CAM.NAD.= 42.79N 34.33E SWING= 268. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4703.2 KM. SUN AZM=113.3																		
LAC 27 GEMINUS,AT ; LAC 26 EUDOXUS,BU ; LAC 13 ARISTOTE., ; LAC 14 ENDYMION,STRABO ; LAC 42 M.SERENITY,DA																		
L 4	2	79°	41.83N	39.05E	15	00	061131	5-16-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	2964K	37050000	103	2.1	25	-0.90
CAM.NAD.= 42.79N 34.33E SWING= 268. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4703.2 KM. SUN AZM=113.3																		
LAC 27 GEMINUS,ATLAS ; W>1/2 MOON SPHERE ; LAC 1 N.POLE NEARSIDE BY ; LAC 13 ARISTOTE.,M.FRIG ; LAC 78 THEOPHILUS																		
L 4	1	80°	70.45N	46.09E	15	00	065107	5-16-67	LUNAR ORB	HI. 610MM B&W	-	NONE	3479K	5703279	147	0.8	13	-0.3
CAM.NAD.= 71.89N 43.34E SWING= 323. PHASE= 79. EMIS.ANG.= 3. CAM.RAD.= 5218.2 KM. SUN AZM=128.9																		
LAC 4 METON,DESIT ; LAC 5 PETERMANN, ; LAC 13 ARISTOTE., ; LAC 14 ENDYMION,STRABO ; LAC 1 N.POLE NEARSID																		
L 4	2	84°	15.18S	24.28E	16	00	170857	5-16-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	2727K	34087500	124	0.8	23	-0.00
CAM.NAD.= 14.45S 23.18E SWING= 310. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 4466.2 KM. SUN AZM= 82.8																		
LAC 78 THEOPHILUS ; W>1/2 MOON SPHERE ; LAC 41 APENNINES, ; LAC 13 ARISTOTE.,M.FRIG ; LAC 113 MAUROLYCUS,R																		
L 4	1	86°	41.02N	31.25E	16	00	181300	5-16-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2956K	4845902	122	1.9	24	-0.68
CAM.NAD.= 42.80N 27.61E SWING= 286. PHASE= 71. EMIS.ANG.= 5. CAM.RAD.= 4695.2 KM. SUN AZM=111.7																		
LAC 26 EUDOXUS,BU ; LAC 27 GEMINUS,AT ; LAC 13 ARISTOTE., ; LAC 14 ENDYMION,STRABO ; LAC 42 M.SERENITY,DA																		
L 4	1	91°	42.03N	25.73E	17	00	061439	5-17-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2947K	4831148	100	2.1	24	-0.38
CAM.NAD.= 42.80N 21.90E SWING= 265. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4686.2 KM. SUN AZM=112.5																		
EASTERN PART OF LAC 26 EUDOXUS,BUR ; LAC 27 GEMINUS,ATL ; LAC 13 ARISTOTE., ; LAC 14 ENDYMION,STRABO ; LAC 42 M.SERENIT																		
L 4	1	92°	71.16N	32.23E	17	00	065357	5-17-67	LUNAR ORB	HI. 610MM B&W	-	NONE	3457K	5667213	129	0.6	12	-0.3
CAM.NAD.= 71.92N 29.48E SWING= 306. PHASE= 79. EMIS.ANG.= 2. CAM.RAD.= 5196.2 KM. SUN AZM=127.4																		
LAC 4 METON,DESIT ; LAC 5 PETERMANN, ; LAC 3 PHILOLAUS,B ; LAC 13 ARISTOTE.,M.FRIG ; LAC 1 N.POLE NEARSID																		
L 4	1	98°	40.97N	18.53E	18	00	181625	5-17-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2938K	4816393	118	2.2	23	-0.76
CAM.NAD.= 42.81N 14.21E SWING= 282. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4677.2 KM. SUN AZM=111.3																		
LAC 26 EUDOXUS,BU ; CENTRAL PART OF LAC 13 ARISTOTE., ; WESTERN PART OF LAC 42 M.SERENITY,DAVES ; LAC 41 APENNINES,HA																		

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. N	ORB N	GET TIMES-HR	GHI M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT; TUDE M=N.HI K=KM.	SCALE PRIN. PT.	T A2	L ANG.	I ANG.	SUN ANG.	SYDE FWD. LAT. VERT
L 4	1	103	41.81N	11.28E	19	000	0000	061815	5-18-67	LUNAR ORB HI. 610MM B&W	- NONE	2927K	4798361	107	1.7	22	-	77
CAM.NAD.= 42.76N 7.57E SWING= 272. PHASE= 72. EMIS.ANG.= 5. CAM.RAD.= 4666.2 KM. SUN AZH=110.7																		
WESTERN PART OF LAC 26 EUFOXUS,BUR ; LAC 25 CASSINI,ALP ; LAC 13 ARISTOTE., ; LAC 41 APENNINES,HAEMUS & LAC 42 M.SERENIT																		
L 4	1	104	70.35N	18.10E	19	000	0000	065708	5-18-67	LUNAR ORB HI. 610MM B&W	- NONE	3428K	5619672	153	9	12	-	1
CAM.NAD.= 71.87N 15.88E SWING= 330. PHASE= 80. EMIS.ANG.= 3. CAM.RAD.= 5167.2 KM. SUN AZH=125.4																		
LAC 4 METON,DESIT ; LAC 3 PHILOLAUS,B ; LAC 13 ARISTOTE., ; LAC 12 PLATO,ALPINE VAL. & LAC 1 N.POLE NEARSID																		
L 4	1	110	42.59N	3.35E	20	000	0000	182013	5-18-67	LUNAR ORB HI. 610MM B&W	- NONE	2916K	4780328	94	1.1	21	-	77
CAM.NAD.= 42.77N 0.86E SWING= 259. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4655.2 KM. SUN AZH=109.6																		
EASTERN PART OF LAC 25 CASSINI,ALP ; LAC 26 EUFOXUS,BUR ; LAC 12 PLATO,ALP ; LAC 13 ARISTOTE.,M.FRIG & LAC 41 APENNINES																		
L 4	1	115	42.27N	2.67W	21	000	0000	062212	5-19-67	LUNAR ORB HI. 610MM B&W	- NONE	2905K	4762295	101	1.4	21	-	77
CAM.NAD.= 42.76N 5.70W SWING= 267. PHASE= 73. EMIS.ANG.= 4. CAM.RAD.= 4644.2 KM. SUN AZH=109.5																		
LAC 25 CASSINI,AL ; LAC 12 PLATO,ALP ; LAC 13 ARISTOTE., ; LAC 40 TIMOCHARIS,LAMBERT & LAC 41 APENNINES,HA																		
L 4	1	116	70.80N	4.49E	21	000	0000	070041	5-19-67	LUNAR ORB HI. 610MM B&W	- NONE	3397K	5568852	148	6	12	-	1
CAM.NAD.= 71.88N 2.48E SWING= 326. PHASE= 80. EMIS.ANG.= 2. CAM.RAD.= 5136.2 KM. SUN AZH=124.1																		
LAC 3 PHILOLAUS,B ; LAC 4 METON,DESIT ; LAC 12 PLATO,ALP ; LAC 13 ARISTOTE.,M.FRIG & LAC 1 N.POLE NEARSID																		
L 4	2	133	18.74N	29.69W	24	000	0000	175540	5-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	2673K	33412500	340	3.3	19	-	20
CAM.NAD.= 13.91N 27.86W SWING= 156. PHASE= 68. EMIS.ANG.= 8. CAM.RAD.= 4412.2 KM. SUN AZH= 95.9																		
LAC 40 TIMOCHARIS,LAMBERT ; >1/2 MOON SPHERE ; LAC 93 M.HUMOR.,GASSFNDI & LAC 2 ANAXIMENES,PA																		
L 4	2	151	40.88N	40.20W	27	000	0000	063228	5-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	2866K	35825000	118	2.4	21	-	00
CAM.NAD.= 4.84N 44.74W SWING= 282. PHASE= 75. EMIS.ANG.= 6. CAM.RAD.= 4605.2 KM. SUN AZH=108.3																		
LAC 23 HUMKER,SHA ; >1/2 MOON SPHERE ; LAC 74 GRIMALDI,B ; LAC 1 N.POLE NEARSIDE BYRD,PFARY >80 N & LAC 13 ARISTOTE.,M.F																		
L 4	2	158	42.00N	47.66W	28	000	0000	183333	5-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	2866K	35825000	106	1.7	20	-	00
CAM.NAD.= 42.85N 51.22W SWING= 271. PHASE= 75. EMIS.ANG.= 4. CAM.RAD.= 4605.2 KM. SUN AZH=107.7																		
LAC 23 HUMKER,SHARP ; >1/2 MOON SPHERE ; LAC 73 RICCIOLI,NE.ORIENTAL & LAC 1 N.POLE NEARSID																		
L 4	2	170	41.78N	59.60W	30	000	0000	183518	5-23-67	LUNAR ORB LO.F=80MM B&W	- NONE	2871K	35887500	108	2.2	20	-	1
CAM.NAD.= 43.00N 64.22W SWING= 271. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4610.2 KM. SUN AZH=107.7																		
LAC 23 HUMKER,SHARP ; >1/2 MOON SPHERE ; LAC 73 RICCIOLI,NE.ORIENTAL & LAC 6																		
L 5	2	5	59.91N	111.74W	2	000	0000	112203	8-06-67	LUNAR ORB LO.F=80MM B&W	- NONE	2647K	33087500	286	9.7	8	-	00
CAM.NAD.= 58.97N 81.16W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4186.2 KM. SUN AZH=259.5																		
LAC 20 COULUMB ; >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N.POLE NEARSIDE BYRD,PFARY >80 N & LAC 5 PETERMANN, HAY																		
L 5	2	6	59.85N	111.63W	2	000	0000	112205	8-06-67	LUNAR ORB LO.F=80MM B&W	- NONE	2648K	33100000	286	9.7	8	-	9
CAM.NAD.= 58.94N 81.15W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4387.2 KM. SUN AZH=259.6																		
LAC 20 COULUMB ; >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N.POLE NEARSIDE BYRD,PFARY >80 N & LAC 5 PETERMANN, HAY																		
L 5	2	7	59.78N	111.58W	2	000	0000	112208	8-06-67	LUNAR ORB LO.F=80MM B&W	- NONE	2650K	33125000	286	9.7	8	-	9
CAM.NAD.= 58.91N 81.14W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4389.2 KM. SUN AZH=259.7																		
LAC 20 COULUMB ; >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N.POLE NEARSIDE BYRD,PFARY >80 N & LAC 5 PETERMANN, HAY																		

MIS SION	MAG ROLL	FR- PHOTO OR LAT.	PRIN. PT. LONG.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE	SCALE PRIN. M=K.M. PT.	AT AZ	T FR.	I ANG.	L ANG.	T FR.	SUN ANG.	SIDE FW L S.
L 5 2	8	59.72N	111.50W	2 ***	112211	8-06-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2652K	33150000	286	9.6	8	-	9.6	8
CAM.NAD.= 58.88N 81.12W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4391.2 KM. SUN AZH=259.8																		
LAC 20 COULOMB 1 >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N 6 LAC 5 PETERMANN, HAY																		
L 5 2	9	59.65N	111.42W	2 ***	112214	8-06-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2654K	33175000	286	9.6	8	-	9.6	8
CAM.NAD.= 58.85N 81.11W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4393.2 KM. SUN AZH=259.8																		
LAC 20 COULOMB 1 >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N 6 LAC 5 PETERMANN, HAY																		
L 5 2	10	59.59N	111.34W	2 ***	112216	8-06-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2656K	33200000	285	9.6	8	-	9.6	8
CAM.NAD.= 58.82N 81.10W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4395.2 KM. SUN AZH=259.9																		
LAC 20 COULOMB 1 >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N 6 LAC 5 PETERMANN, HAY																		
L 5 2	11	59.52N	111.27W	2 ***	112219	8-06-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2657K	33212500	285	9.6	8	-	9.6	8
CAM.NAD.= 58.79N 81.09W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4396.2 KM. SUN AZH=260.0																		
LAC 20 COULOMB 1 >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N 6 LAC 5 PETERMANN, HAY																		
L 5 2	12	59.46N	111.19W	2 ***	112222	8-06-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2659K	33237500	285	9.6	8	-	9.6	8
CAM.NAD.= 58.75N 81.08W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4398.2 KM. SUN AZH=260.1																		
LAC 20 COULOMB 1 >1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N 6 LAC 5 PETERMANN, HAY																		

TOTAL PHOTOS IN THIS GROUP = 26



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (0), (1). OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTAR=EKTA 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10= AS EXPOS SPEED = 1/1000 FOR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT D

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T	I	L	T	SUN	SIDE
SION	HULL	OR	LAT.				TIMES=HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FW			
#	#	MAIN	LONG.				(ESTIMATED)			TYPE		M=N.MI	PT.		FR.					
												K=KM.			VERT					
L 4	1	55	42.07N	65.57E	11	00	0000	060707	5-14-67	LUNAR ORB HI. 610MM B&W	-	NONE	2982K	4880525	102	1.9	26	-		
			CAM.NAD.= 42.84N	61.25E			SWING= 266.			PHASE= 69.	EMIS.ANG.= 5.		CAM.RAD.= 4721.2 KM.				SUN AZH=115.1			
			LAC 28 GAUSS,MESS	1			NORTHERN PART OF LAC 44 CLEOMEDES, 1													
L 4	1	56	70.35N	68.44E	11	00	0000	064639	5-14-67	LUNAR ORB HI. 610MM B&W	-	NONE	3495K	5729508	214	.8	13	-		
			CAM.NAD.= 71.63N	71.06E			SWING= 25.			PHASE= 78.	EMIS.ANG.= 2.		CAM.RAD.= 5234.2 KM.				SUN AZH=126.8			
			LAC 5 PETERHANN, 1				LAC 4 METON,DESIT ; LAC 14 ENDYMION,S ;													
L 4	1	62	42.37N	59.16E	12	00	0000	180759	5-14-67	LUNAR ORB HI. 610MM B&W	-	NONE	2979K	4883607	95	2.0	25	-		
			CAM.NAD.= 42.81N	54.52E			SWING= 260.			PHASE= 70.	EMIS.ANG.= 5.		CAM.RAD.= 4718.2 KM.				SUN AZH=115.0			
			LAC 28 GAUSS,MESS	1			LAC 27 GEMINUS,AT ; LAC 14 ENDYMION,S ;													
L 4	1	67	41.80N	51.64E	13	00	0000	060901	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	2976K	4878689	108	1.8	25	-		
			CAM.NAD.= 42.81N	47.79E			SWING= 272.			PHASE= 70.	EMIS.ANG.= 5.		CAM.RAD.= 4715.2 KM.				SUN AZH=113.6			
			EASTERN PART OF LAC				LAC 27 GEMINUS,ATL ; LAC 28 GAUSS,MESSA ; LAC 14 ENDYMION,S ;													
L 4	1	68	70.93N	53.66E	13	00	0000	064827	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	3468K	5718033	239	.7	12	-		
			CAM.NAD.= 71.63N	57.12E			SWING= 50.			PHASE= 78.	EMIS.ANG.= 2.		CAM.RAD.= 5227.2 KM.				SUN AZH=124.4			
			LAC 4 METON,DESIT ;				LAC 5 PETERHANN, 1 LAC 14 ENDYMION,S ;													
L 4	1	74	40.70N	45.57E	14	00	0000	181008	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	2970K	4868852	119	2.3	25	-		
			CAM.NAD.= 42.75N	41.06E			SWING= 283.			PHASE= 71.	EMIS.ANG.= 6.		CAM.RAD.= 4709.2 KM.				SUN AZH=113.2			
			CENTRAL PART OF LAC				LAC 27 GEMINUS,ATLAS													
L 4	1	79	41.83N	39.04E	15	00	0000	061131	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2964K	4859016	103	2.1	25	-		
			CAM.NAD.= 42.79N	34.33E			SWING= 268.			PHASE= 71.	EMIS.ANG.= 6.		CAM.RAD.= 4703.2 KM.				SUN AZH=113.3			
			LAC 27 GEMINUS,AT				LAC 26 EUDOXUS,BU ; LAC 13 ARISTOTE., ;													
L 4	1	80	70.45N	46.09E	15	00	0000	065107	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	3479K	5703279	147	.8	13	-		
			CAM.NAD.= 71.89N	43.34E			SWING= 323.			PHASE= 79.	EMIS.ANG.= 3.		CAM.RAD.= 5218.2 KM.				SUN AZH=128.9			
			LAC 4 METON,DESIT ;				LAC 5 PETERHANN, 1 LAC 13 ARISTOTE., ;													
L 4	1	86	41.02N	31.25E	16	00	0000	181300	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2956K	4845902	122	1.9	24	-		
			CAM.NAD.= 42.80N	27.61E			SWING= 286.			PHASE= 71.	EMIS.ANG.= 5.		CAM.RAD.= 4695.2 KM.				SUN AZH=111.7			
			LAC 26 EUDOXUS,BU ;				LAC 27 GEMINUS,AT ; LAC 13 ARISTOTE., ;													

OR ORIGINAL PAGE IS POOR  
 REPRODUCIBILITY OF THE

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. #	ORB TIMES	GET HR	GHT M	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN.	AT PT.	T FR.	I ANG.	L ANG.	T ANG.	SUN FWD.	SIDE LAP	
											K=KM.	M=N.MI	PT.	FR.	VERT						
L 4	2	89	15.09S	16.90E	17	***	****	051044	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2724K	34050000	154	.5	22	-	..		
CAM.NAD.= 14.45S											SWING= 390.	PHASE= 68.	EMIS.ANG.= 1.	CAM.RAD.=	4463.2 KM.	SUN AZM= 83.2					
LAC 78 THEOPHILUS ;											>1/2 MOON SPHERE ; LAC 14 ENDYMION,S ; LAC 42 M.SERENITY,DAWES										
											& LAC 113 MAUROLYCUS,R										
L 4	1	91	42.03N	25.73E	17	***	****	061439	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2947K	4831148	100	2.1	24	-	36		
CAM.NAD.= 42.86N											SWING= 265.	PHASE= 72.	EMIS.ANG.= 6.	CAM.RAD.=	4686.2 KM.	SUN AZM=112.5					
EASTERN PART OF LAC											26.EUDOXUS,BUR ; LAC 27 GEMINUS,ATL ; LAC 13 ARISTOTE.. ; LAC 14 ENDYMION,STRABO										
											& LAC 42 M.SERENIT										
L 4	1	92	71.16N	32.23E	17	***	****	065357	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	3457K	5667213	129	.6	12	-	3		
CAM.NAD.= 71.92N											SWING= 306.	PHASE= 79.	EMIS.ANG.= 2.	CAM.RAD.=	5196.2 KM.	SUN AZM=127.4					
LAC 4 METON,DESIT ;											LAC 5 PETERMANN, ; LAC 3 PHILOLAUS,B ; LAC 13 ARISTOTE..M.FRIG										
											& LAC 1 N.POLE NEARSID										
L 4	2	122	42.08N	9.24W	22	***	****	182411	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2895K	36187500	105	1.4	21	-	22		
CAM.NAD.= 42.76N											SWING= 270.	PHASE= 73.	EMIS.ANG.= 4.	CAM.RAD.=	4634.2 KM.	SUN AZM=109.1					
LAC 25 CASSINI,AL ;											>1/2 MOON SPHERE ; LAC 76 RIPHAUS M ; LAC 1 N.POLE NEARSIDE BYRD,PEARY >80 N										
											& LAC 14 ENDYMION,STRA										
L 4	2	134	46.31N	18.14W	24	***	****	182759	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2879K	35987500	53	3.7	21	-	39		
CAM.NAD.= 42.80N											SWING= 218.	PHASE= 74.	EMIS.ANG.= 10.	CAM.RAD.=	4618.2 KM.	SUN AZM=113.2					
LAC 24 SINUS IRID ;											>1/2 MOON SPHERE ; LAC 75 LETRONNE,F ; LAC 1 N.POLE NEARSIDE BYRD,PEARY >80 N										
											& LAC 14 ENDYMION,STRA										
L 4	2	139	42.17N	28.25W	25	***	****	062940	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2872K	35900000	102	1.6	20	-	24		
CAM.NAD.= 42.82N											SWING= 267.	PHASE= 74.	EMIS.ANG.= 4.	CAM.RAD.=	4611.2 KM.	SUN AZM=108.6					
LAC 24 SINUS IRID ;											>1/2 MOON SPHERE ; LAC 74 GRIMALDI,B ; LAC 1 N.POLE NEARSIDE BYRD,PEARY >80 N										
											& LAC 14 ENDYMION,STRA										
L 4	2	145	42.34N	33.70W	26	***	****	183109	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2868K	35850000	96	2.1	21	-	..		
CAM.NAD.= 42.82N											SWING= 260.	PHASE= 75.	EMIS.ANG.= 5.	CAM.RAD.=	4607.2 KM.	SUN AZM=109.1					
LAC 24 SINUS IRID ;											>1/2 MOON SPHERE ; LAC 74 GRIMALDI,B ; LAC 5 PETERMANN, HAYN										
											& LAC 14 ENDYMION,STRA										
L 4	1	165	38.84N	81.13E	29	***	****	094351	5-23-67	LUNAR ORB HI. 610MM B&W	-	NONE	5487K	8995082	290	7.6	14	-	..		
CAM.NAD.= 33.96N											SWING= 282.	PHASE= 109.	EMIS.ANG.= 33.	CAM.RAD.=	7226.2 KM.	SUN AZM=259.4					
LAC 28 GAUSS,MESS ;											>1/4 MOONS SPHERE ; LAC 14 ENDYMION,S ; LAC 15 M.HUMBOLTIANUM										
											& LAC 43 NEPER,SCHUBER										

TOTAL PHOTOS IN THIS GROUP = 17

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: . = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS PLANAR,B; OGEN,SONAR; FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG #	FR. PHOTO OR MAIN	PRIN. PT. LAT.	ORB LONG.	GET #	GMT TIMES-HR M SEC (=ESTIMATED)	M-DA-YR	CAMERA-LENS ON SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. PT. M=N.HI K=KM.	T I L T AZ ANG. FR. VERT	SUN SIDE, ANG. ANG. FWD. LAP S. S
L 4	1	36	41.65N	85.89E	8	000 0000	180452	5-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	2982K	4888525	107 2.1 27 -.90
			CAM.NAD.= 42.83N	81.30E		SWING= 271.	PHASE= 68.	EMIS.ANG.= 6.		CAM.RAD.= 4721.2 KM.		SUN AZM=116.6	
		LAC 29 BRUNO FABRY	NORTHERN PART OF LAC 45 PLUTARCH, H 1 EASTERN PART OF LAC 15 M.HUMBOLDTIANUM & LAC 16										
L 4	1	413	41.26N	80.11E	9	000 0000	060535	5-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2984K	4891803	109 2.5 28 -.90
			CAM.NAD.= 42.85N	74.64E		SWING= 273.	PHASE= 69.	EMIS.ANG.= 7.		CAM.RAD.= 4723.2 KM.		SUN AZM=116.7	
		DEGRADED NEGATIVE	LAC 28 GAUSS, MESSALA, ZEN; LAC 29 BRUNO FABRY & EASTERN PART OF LAC 15 M.HUMBOLDTIANUM										
L 4	1	425	70.09N	84.08E	9	000 0000	064506	5-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	3494K	5727869	188 .8 14 -.90
			CAM.NAD.= 71.66N	84.75E		SWING= 357.	PHASE= 78.	EMIS.ANG.= 2.		CAM.RAD.= 5233.2 KM.		SUN AZM=130.1	
		DEGRADED NEGATIVE	LAC 5 PETERMANN, LAC 6 LAC 15 M.HUMBOLDTIANUM & LAC 1 N.POLE NEARSID										
L 4	1	480	41.21N	71.77E	10	000 0000	180618	5-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2983K	4890164	118 1.9 26 -.00
			CAM.NAD.= 42.84N	67.95E		SWING= 282.	PHASE= 69.	EMIS.ANG.= 5.		CAM.RAD.= 4722.2 KM.		SUN AZM=114.8	
		LAC 28 GAUSS, MESS	LAC 15 M.HUMBOLDTIANUM; LAC 44 CLEOMEDES, LAC 45 PLUTARCH, HAHN & LAC 29 BRUNO FABRY										
L 4	1	55	42.07N	65.57E	11	000 0000	060707	5-14-67 LUNAR ORB HI. 610MM B&W	-	NONE	2982K	4888525	102 1.9 26 -.90
			CAM.NAD.= 42.84N	61.25E		SWING= 266.	PHASE= 69.	EMIS.ANG.= 5.		CAM.RAD.= 4721.2 KM.		SUN AZM=115.1	
		LAC 28 GAUSS, MESS	NORTHERN PART OF LAC 44 CLEOMEDES, N. E. PART OF LAC 14 ENDYMION, STRABO & LAC 15 M.HUMBOLDTIANUM										
L 4	1	56	70.35N	68.44E	11	000 0000	064639	5-14-67 LUNAR ORB HI. 610MM B&W	-	NONE	3495K	5729508	214 .8 13 -.90
			CAM.NAD.= 71.63N	71.06E		SWING= 25.	PHASE= 78.	EMIS.ANG.= 2.		CAM.RAD.= 5234.2 KM.		SUN AZM=126.8	
		LAC 5 PETERMANN, LAC 4 METON, DESIT	LAC 14 ENDYMION, S; LAC 15 M.HUMBOLDTIANUM & LAC 1 N.POLE NEARSID										
L 4	1	62	42.37N	59.16E	12	000 0000	180759	5-14-67 LUNAR ORB HI. 610MM B&W	-	NONE	2979K	4883607	95 2.0 25 -.00
			CAM.NAD.= 42.81N	54.52E		SWING= 260.	PHASE= 70.	EMIS.ANG.= 5.		CAM.RAD.= 4718.2 KM.		SUN AZM=115.0	
		LAC 28 GAUSS, MESS	LAC 27 GEMINUS, AT; LAC 14 ENDYMION, S; LAC 15 M.HUMBOLDTIANUM & LAC 44 CLEOMEDES, M.C										
L 4	2	152	69.78N	29.61W	27	000 0000	071044	5-22-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3345K	41812500	142 1.5 13 -.90
			CAM.NAD.= 72.23N	34.79W		SWING= 321.	PHASE= 81.	EMIS.ANG.= 4.		CAM.RAD.= 5084.2 KM.		SUN AZM=126.4	
		LAC 3 PHILOLAUS, B	W>1/2 MOON SPHERE; LAC 39 ARISTARCHU; LAC 6 & LAC 15 M.HUMBOLDTIANUM										
L 4	2	164	70.20N	41.50W	29	000 0000	071247	5-23-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3346K	41825000	136 1.4 13 -.00
			CAM.NAD.= 72.26N	47.11W		SWING= 313.	PHASE= 81.	EMIS.ANG.= 4.		CAM.RAD.= 5085.2 KM.		SUN AZM=126.8	
		LAC 2 ANAXIMENES, PASCAL	W>1/2 MOON SPHERE; LAC 22 SE. GERARD, BUNSEN, LAC 15 M.HUMBOLDTIANUM & LAC 42 M.SERENITY										

MIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GEI	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	TILT	SUN SIDE,
SION ROLL	OR	LAT.	#	TIMES-HR M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ ANG, ANG, FWD
#	#	MAIN	LONG.	(?-ESTIMATED)				TYPE		M=N.MI	PT.	FR. LA
										K=KM.		VERT 8.
L 4 1	165	38.84N	81.13E	29 ***	094351	5-23-67	LUNAR ORB HI.	610MM B&W	-	NONE	5487K	8995082 290 7.6 14 -.
		CAM.NAD.= 33.96N	112.70E	SWING= 282.	PHASE= 109.	EMIS.ANG.= 33.	CAM.RAD.=			7226.2 KM.		SUN AZH=259.4
		LAC 28 GAUSS, NESS ;	W1/4 MOONS SPHERE ;	LAC 14 ENDYMION, S ;	LAC 15 M. HUMBOLTIANUM							6 LAC 63 NEPER, SCHUBER
L 4 2	190	70.34N	63.47W	33 ***	071554	5-25-67	LUNAR ORB LO, F=80MM	B&W	-	NONE	3373K	42162500 125 1.9 14 -.
		CAM.NAD.= 72.71N	72.45W	SWING= 306.	PHASE= 82.	EMIS.ANG.= 6.	CAM.RAD.=			5112.2 KM.		SUN AZH=129.2
		LAC 2 ANAXIMENES, ;	W1/2 MOON SPHERE ;	LAC 54 BELB LAUE ;	LAC 15 M. HUMBOLTIANUM							6 LAC 27 GEMINUS, ATLAS

TOTAL PHOTOS IN THIS GROUP = 11

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN:

• • DEGRADED PHOTOS.

SM ALMOST UNUSABLE PHOTOS.

TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZI) & VERTICAL TO CAMERA AXIS

(-), (+), ( ), OR (0) = NO INFO      W = APPROXIMATELY      NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND

CAMERA-LENS AS FOLLOWS:

SW.A. = SUPER WIDE ANGLE LENS; EKTR-EKTAR 2.8 LENS;

HSH= HASSELBLAD

10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)

FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS

FOR LUNAR ORBITER 4 AFTER ALTITUDE EQUALS 40 KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT PP IF ALT NOT 0.

MIS SION	MAG RULL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. #	ORB TIMES-HR	GET GHT SEC (I=ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N,M1 K=KM.	SCALE AT PRIN. PT.	I L T A7 ANG.	SUN SIDP. ANG. FWD				
L 4	3	36	41.65N	85.89E	8	***	****	180452	5-12-67	LUNAR ORB HI. 610MM B&W	-	NONE	2982K	4088525	107	2.1	27	-
CAM.NAD.= 42.83N 81.30E SWING= 271. PHASE= 68. EMIS.ANG.= 6. CAM.RAD.= 4721.2 KM. SUN AZH=116.6																		
LAC 29 BRUNO FABR ; NORTHERN PART OF LAC 45 PLUTARCH, H ; EASTERN PART OF LAC 15 M.HUMPHRIANUM & LAC 16																		
L 4	2	46	41.02N	31.24E	16	***	****	181300	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2956K	36950000	122	1.9	24	-
CAM.NAD.= 42.80N 27.61E SWING= 286. PHASE= 71. EMIS.ANG.= 5. CAM.RAD.= 4695.2 KM. SUN AZH=111.7																		
LAC 26 EUDOXUS, BU ; >1/2 MOON SPHERE ; LAC 16 ; LAC 5 PETERMANN, HAYN & LAC 44 CLEOMEDES, M.C																		
L 4	2	91	42.03N	25.72E	17	***	****	061439	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2947K	36837500	100	2.1	24	-
CAM.NAD.= 42.80N 20.90E SWING= 265. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4686.2 KM. SUN AZH=112.5																		
LAC 26 EUDOXUS, BURG ; >1/2 MOON SPHERE ; LAC 1 N.POLE NEARSIDE BYRD, PEAR6 & LAC 16																		
L 4	2	104	70.35N	10.10E	19	***	****	065708	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3428K	42850000	153	.8	12	-
CAM.NAD.= 71.87N 15.88E SWING= 330. PHASE= 80. EMIS.ANG.= 3. CAM.RAD.= 5167.2 KM. SUN AZH=125.4																		
LAC 4 METON, DESITTER ; >1/4 MOONS SPHERE ; LAC 58 COPERNICUS, REINHO ; LAC 1 N.POLE NEARSIDE R & LAC 16																		
L 4	2	115	42.28N	2.67W	21	***	****	062212	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2905K	36312500	101	1.4	21	-
CAM.NAD.= 42.76N 5.70W SWING= 266. PHASE= 73. EMIS.ANG.= 4. CAM.RAD.= 4644.2 KM. SUN AZH=109.5																		
LAC 25 CASSINI, AL ; >1/2 MOON SPHERE ; LAC 76 HIPHAUS M ; LAC 1 N.POLE NEARSIDE BYRD, PFARY >80 N & LAC 16																		
L 4	2	140	71.06N	16.31W	25	***	****	070801	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3355K	41937500	117	1.2	13	-
CAM.NAD.= 72.21N 22.53W SWING= 297. PHASE= 81. EMIS.ANG.= 3. CAM.RAD.= 5094.2 KM. SUN AZH=127.7																		
LAC 3 PHILOLAUS, B ; >1/2 MOON SPHERE ; LAC 38 SELEUCUS, S ; LAC 1 N.POLE NEARSIDE BYRD, PFARY >80 N & LAC 16																		
L 5	2	158	37.94N	126.79E	64	***	****	101006	8-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1233K	15412500	270	24.2	11	-
CAM.NAD.= 37.69N 152.57E SWING= 90. PHASE= 124. EMIS.ANG.= 44. CAM.RAD.= 2972.2 KM. SUN AZH=263.2																		
LAC 30 E.SZILARD ; >1/4 MOONS SPHERE ; LAC 31 WIENER ; LAC 17 & LAC 48 W.M.MOSCOVIEV																		
L 5	2	163	38.16N	121.24E	67	***	****	194259	8-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1231K	15387500	279	24.3	11	-
CAM.NAD.= 37.62N 147.19E SWING= 90. PHASE= 123. EMIS.ANG.= 45. CAM.RAD.= 2970.2 KM. SUN AZH=262.7																		
LAC 30 E.SZILARD ; >1/4 MOONS SPHERE ; LAC 31 WIENER ; LAC 17 & LAC 48 W.M.MOSCOVIEV																		
L 5	1	181	41.85N	109.39E	74	***	****	175642	8-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	1181K	1936066	279	23.4	11	-
CAM.NAD.= 41.01N 134.27E SWING= 90. PHASE= 121. EMIS.ANG.= 42. CAM.RAD.= 2920.2 KM. SUN AZH=261.6																		
WESTERN PART OF LAC 30 E.SZILARD WELLS ; S. W. PART OF LAC 16 & N. E. PART OF LAC 29 BRUNO FABRY																		

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED

MIS SION		MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE,			
#		#		OR	LAT.		#	TIME	5-HR	M SEC		SENSOR			AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
#		#	MAIN		LONG.			(3=ESTIMATED)				TYPE		M=N,MJ	PT.			FR.		LAP	%
#		#												K=KM.				VERT			
L 5	2	181	41.96N	149.41E	74	00	000	175642	8-17-67	LUNAR	ORB LO.F=80MM	B6W	-	NNNE	1181K	147625ND	279	23.4	11	-..	
			CAM.NAD.=	41.61N	134.27E			SWING=	90.		PHASE=	121.		EMIS.ANG.=	42.	CAM.RAD.=	2920.2 KM.		SUN	AZM=261.6	
			LAC 30 E.SAILARD					5/4 MOONS	SPHERE		LAC 47 OLCOTT		1	LAC 16				6	LAC 29	BRUNO FARRY	

TOTAL PHOTOS IN THIS GROUP = 10

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES: A = AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-), (+), ( ), OR (0) = NO INFO      ≈ = APPROXIMATELY      NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS:      SH.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
HSB= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR);      FOCAL LENGTH(MM) & MAX.F-OPENING  
J0 = AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO;      SCALE IS THE XXX OF 1/XXX ON ORIG.NFG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR,PHOTO OR LAT.	PRIN.PT. LAT.	URB LONG.	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN.	T AZ	L ANG.	T ANG.	SUN FWD.	SIDE, LAP FR. VERT S. R
#	#	MAIN			(I=ESTIMATED)					M=N,M.I K=KM.	PT.					
L 4	2	116 70.80N	4.49E	21	000	000041	5-19-67	LUNAR	ORB LO.F=80MM B&B	-	NONE	3397K	42462500	148	06 12	-000
		CAM=NAD= 71.88N	2.48E		SWING=	326°		PHASE=	80°	EMIS=ANG=	2°	CAM=RAD=	5136.2 KM		SUN AZM=124.1	
		LAC 3 PHILOLAUS,B		LAC 7 KARPINSKY		LAC 41 APENNINES,		LAC 1 N.POLE	NEARSIDE	BYRD,PfARY	>80 N		LAC 17			

L 4 2 128 69.92N 9.43W 23 \*\*\* 070417 5-20-67 LUNAR ORB LO.F=80MM 86W - NONE 3369K 42112500 171 1.0 12 -..

CAM.NAD.= 71.96N 10.32W SWING= 347. PHASE= 80. EMIS.ANG.= 3. CAM.RAD.= 5108.2 KM. SUN AZM=122.3

LAC 3 PHILOLAUS,BARRON : @1/2 MOON SPHERE : LAC 58 COPERNICUS,REINHOLD : LAC 17

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L 5 2 39 38.84N 159.43N 19 *** **** 105252 8-10-67 LUNAR ORB LO.F=BOMH B6W - NONE 1252k 15650000 283 26.8 10 -.**
CAM.HAD.= 37.14N 128.86W SWING= 90. PHASE= 131. EXIS.ANG.= 51. CAM.RAD.= 2991.2 KM. SUN AZH=263.6
LAC 33 SCHNELLER ; W1/4 MOONS SPHERE ; LIMB OR HORIZON ; LAC 20 COULOMB & LAC 52 JOULE E.MACH

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L 5 2 85 38.85N 158.87E 44 000 0000 182940 8-13-67 LUNAR ORB LO.F=80MH 86W - NONE 1239K 15487500 281 25.8 11 -00  
CAM.RAD.= 37.86N 172.42W SWING= 9D. PHASE= 127. EMIS.ANG.= 48. CAM.RAD.= 2978.2 KM SUN AZH=262.9  
LAC 32 HUTION : W/4 MOONS SPHERE : LAC 18 TIKHOV : LAC 50 MURSE & LAC 17

L 5 2 163 38.84N 150.83E 49 \*\*\* 102451 8-14-67 LUNAR ORB LG.F=80MM B6W - NONE 1237K 15462500 281 75.4 11 -.\*\*  
CAM.NAD.= 37.85N 178.75E SWING= 90. PHASE= 126. EMIS.ANG.= 47. CAM.RAD.= 2976.2 KM. SUN AZH=262.9  
LAC 31 HIEHER ; 1/4 MOONS SPHERE ; LAC 32 HUTTON ; LAC 18 TIKHOV & LAC 49 E.M.MOSCOVIEN

L 5 2 124 39.09N 142.80E 54 \*\*\* 022004 8-15-67 LUNAR URB LO.F=80MM B&W - NONE 1237K 15462500 281 25.0 11 -,\*\*  
CAM.RAD.= 37.82N 170.09E SWING= 91. PHASE= 125. EMISS.ANG.= 46. CAM.RAD.= 2976.2 KM SUN AZM=262.9  
LAC 31 GIERER ; W1/4 MOONS SPHERE ; LAC 18 TIKHOV ; LAC 32 HUTTON & LAC 49 F.M.MOSCOVICH

U S 2 158 37.94N 126.79E 64 \*\*\* 0000 101006 8-16-67 LUNAR ORB LO.F=80MM R6W - NONE 1233K 15412500 278 24.2 11 -..

CAN.RAD.= 37.69N 152.57E SWING= 90. PHASE= 124. EMISS.ANG.= 44. CAN.RAD.= 2972.2 KM SUN A7M=263.2

LAC 30 E.SAILAND ; 1/4 MOONS SPHERE ; LAC 31 NIENER ; LAC 17 & LAC 48 B.M.MOSCOWIER

L 5 2 163 38.16N 121.24E 67 00 000 194259 8-16-67 LUNAR ORB LO.F=HMM B6# - NONE 123IK 15387500 279 24.3 11 -..

CAN.NAD.= J7.62N 147.19E SWING= 90. PHASE= 123. EHIS.ANG.= 45. CAN.RAD.= 2970.2 KM. SUN AZH=262.7

LAC 30 E.SAILARD 1 1/4 MOONS SPHERE 1 LAC 31 WIENER 1 LAC 17 6 LAC 48 W.M.MOSCOVIEN

HIS MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT; SCALE AT	T I L T	SUN SIDE.			
SION ROLL	OR	LAT.	N	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	F&D.
"	"	MAIN	LONG.	(I=ESTIMATED)			TYPE		M=N, NI	PT.		FR.		LAP
		"							K&RM.			VERT		R. 8

TOTAL PHOTOS IN THIS GROUP = 8



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN:  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-)(+)( ) : OR(O) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: S.W.A. = SUPER WIDE ANGLE LENS; EXT=EXTAR 2.8 LENS;  
 HSB= HASSFLBLAD; MAUR= MAUREH; 2P,2B,2S = ZEISS LENS(PLANAR,BIOGEN,SONAR) FOCAL LENGTH(MM) & MAX.F-OPENING  
 10° AS EXPOS SPEED = 1/1000 10H = TWO ZEROS;  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE.	
SIUN	KULL	OR	LAT.				TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FRU.	
"	"	MAIN	LONG.				(ESTIMATED)			TYPE		M=N.MI	PT.		FR.	LAP		
												K=KM.			VERT	S.	R	
L 4	2	Y2	71.17N	32.23E	17	000	065357	5-17-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3457K	432125ND	129	.4	12	-90
			CAM.NAD.= 71.92N	29.48E			SWING= 306.	PHASE= 79.	EMIS.ANG.= 2.		CAM.RAD.=	5196.2 KM.		SUN AZM=127.4				
			LAC 4 MELUN,DESI	LAC 7 KARPINSKY			LAC 41 APENNINES		LAC 44 CLEOMEDES,M.CRIS.									
L 4	2	990	J.5IN	179.92E	18	000	232421	5-17-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	6142K	76774999	293	2.4	00	-00
			CAM.NAD.= .11N	172.38W			SWING= 294.	PHASE= 115.	EMIS.ANG.= 11.		CAM.RAD.=	7881.2 KM.		SUN AZM=271.5				
			LAC 68 SHAHUNOV				W1/2 MOON SPHERE		LAC 118 JULES VER									
L 5	1	53	48.85N	176.10W	29	000	184006	8-11-67	LUNAR	ORB HI, 610MM B&W	-	NONE	1190K	1950820	297	25.6	9	-00
			CAM.NAD.= 42.56N	146.99W			SWING= 107.	PHASE= 126.	EMIS.ANG.= 47.		CAM.RAD.=	2929.2 KM.		SUN AZM=261.6				
			LAC 18 TIKHOV															
L 5	2	53	48.97N	176.11W	29	000	184006	8-11-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	1191K	14887500	297	25.6	9	-00
			CAM.NAD.= 42.56N	147.00W			SWING= 107.	PHASE= 126.	EMIS.ANG.= 47.		CAM.RAD.=	2930.2 KM.		SUN AZM=261.6				
			LAC 18 TIKHOV				W1/4 MOONS SPHERE		LAC 50 MORSE									
L 5	2	79	38.78N	167.58E	39	000	023432	8-13-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	1245K	15562500	281	25.8	11	-00
			CAM.NAD.= 37.72N	163.64W			SWING= 89.	PHASE= 128.	EMIS.ANG.= 48.		CAM.RAD.=	2984.2 KM.		SUN AZM=263.3				
			LAC 32 HUTTON				W1/4 MOONS SPHERE		LAC 33 SCHNELLER									
L 5	2	85	38.85N	158.47E	44	000	182940	8-13-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	1239K	15487500	281	25.8	11	-00
			CAM.NAD.= 37.80N	172.42W			SWING= 90.	PHASE= 127.	EMIS.ANG.= 48.		CAM.RAD.=	2978.2 KM.		SUN AZM=262.9				
			LAC 32 HUTTON				W1/4 MOONS SPHERE		LAC 18 TIKHOV									
L 5	2	103	38.84N	150.83E	49	000	102451	8-14-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	1237K	15462500	281	25.4	11	-00
			CAM.NAD.= 37.45N	178.75E			SWING= 90.	PHASE= 126.	EMIS.ANG.= 47.		CAM.RAD.=	2976.2 KM.		SUN AZM=262.9				
			LAC 31 WIENER				W1/4 MOONS SPHERE		LAC 32 HUTTON									
L 5	2	124	39.09N	142.80E	54	000	022004	8-15-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	1237K	15462500	281	25.0	11	-00
			CAM.NAD.= 37.82N	170.09E			SWING= 91.	PHASE= 125.	EMIS.ANG.= 46.		CAM.RAD.=	2976.2 KM.		SUN AZM=262.9				
			LAC 31 WIENER				W1/4 MOONS SPHERE		LAC 18 TIKHOV									

MIS MAG		FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	TILT	SUN SIDE
SION ROLL	OR	LAT.			TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
"	"	MAIN	LONG.		(ESTIMATED)			TYPE		M=N*MI	PT.	FR.	LAP
										K=KM.		VERT	S. *

TOTAL PHOTOS IN THIS GROUP = 8

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREN; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NFG. AT PP IF ALT NOT 0.

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YH	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE.	
SIGN	ROLL	OR	LAT.	N	TIMES-HR	M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	PRO	
#	#	MAIN	LONG.	(I=ESTIMATED)						TYPE		M=N.MI	PT.	FR.	LA			
												K=KM.			VERT	%		
L 4	2	1465	2.79N 136.09E	26	***	***	233025	5-21-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	6148K	76849999	25	0.8	00	-.
		CAM.NAD.=	16N 134.86E		SWING=	45.		PHASE=	109.	EMIS.ANG.=	4.	CAM.RAD.=	7887.2 KM.		SUN	AZM=271.7		
		DEGRADED NEGATIVE :	LAC 66 MENDELEEV															
L 5	1	28	26.39N 133.19W	8	***	***	145230	8-08-67	LUNAR ORB	HI. 610MM B&W	-	NONE	5015K	8221311	281	8.7	0	-.
		CAM.NAD.=	24.16N 103.16W		SWING=	90.		PHASE=	118.	EMIS.ANG.=	36.	CAM.RAD.=	6754.2 KM.		SUN	AZM=267.7		
		LAC 52 JOULE L.MA :	W1/4 MOONS SPHERE :															
L 5	1	29	59.12N 147.18W	9	***	***	215131	8-08-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2548K	4177049	284	11.0	11	-.
		CAM.NAD.=	59.08N 113.56W		SWING=	90.		PHASE=	107.	EMIS.ANG.=	28.	CAM.RAD.=	4287.2 KM.		SUN	AZM=259.7		
		LAC 19 CARNUT ROW :	W1/4 MOONS SPHERE :															
L 5	2	29	59.34N 147.21W	9	***	***	215131	8-08-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	2548K	31850000	285	11.0	11	-.
		CAM.NAD.=	59.08N 113.56W		SWING=	91.		PHASE=	107.	EMIS.ANG.=	28.	CAM.RAD.=	4287.2 KM.		SUN	AZM=259.6		
		LAC 19 CARNUT ROW :	LUNAR DISC FAR SID :															
L 5	2	79	38.78N 167.58E	39	***	***	023432	8-13-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	1245K	15562500	281	25.8	11	-.
		CAM.NAD.=	37.72N 163.64W		SWING=	89.		PHASE=	128.	EMIS.ANG.=	48.	CAM.RAD.=	2984.2 KM.		SUN	AZM=263.3		
		LAC 32 HUTTEN :	W1/4 MOONS SPHERE :															

TOTAL PHOTOS IN THIS GROUP = 5

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNSALABLE PHOTOS.  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR == TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

SUN	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T	I	L	T	SUN	SIDE,
#	#	#	MAIN	LUNG.	(ESTIMATED)					TYPE		N=N.MI	PT.		FR.	LAP				
												K=KM.			VERT					%
L 5	1	5	59.69N	111.74W	2	***	112203	8-06-67	LUNAR	ORB HI, 610MM B&W	-	NONE	2447K	4339344	285	9.7	8	-	..	
CAM.NAD.= 58.97N 81.16W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4386.2 KM. SUN AZM=259.5																				
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN																				
L 5	2	5	59.91N	111.74W	2	***	112203	8-06-67	LUNAR	ORB LO,F=80MM B&W	-	NONE	2447K	33087500	286	9.7	8	-	..	
CAM.NAD.= 58.97N 81.16W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4386.2 KM. SUN AZM=259.5																				
LAC 20 COULUMB ; W>1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N.POLE NEAR SIDE BYRD,PEARY >80 N & LAC 5 PETERMANN, HAY																				
L 5	1	6	59.63N	111.66W	2	***	112205	8-06-67	LUNAR	ORB HI, 610MM B&W	-	NONE	2448K	4340984	285	9.7	8	-	.90	
CAM.NAD.= 58.94N 81.15W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4387.2 KM. SUN AZM=259.0																				
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN																				
L 5	2	6	59.85N	111.66W	2	***	112205	8-06-67	LUNAR	ORB LO,F=80MM B&W	-	NONE	2448K	33100000	286	9.7	8	-	.90	
CAM.NAD.= 58.94N 81.15W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4387.2 KM. SUN AZM=259.6																				
LAC 20 COULUMB ; W>1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N.POLE NEAR SIDE BYRD,PEARY >80 N & LAC 5 PETERMANN, HAY																				
L 5	1	7	59.56N	111.58W	2	***	112208	8-06-67	LUNAR	ORB HI, 610MM B&W	-	NONE	2450K	4344262	285	9.7	8	-	.90	
CAM.NAD.= 58.91N 81.14W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4389.2 KM. SUN AZM=259.7																				
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN																				
L 5	2	7	59.78N	111.58W	2	***	112208	8-06-67	LUNAR	ORB LO,F=80MM B&W	-	NONE	2450K	33125000	286	9.7	8	-	.90	
CAM.NAD.= 58.91N 81.14W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4389.2 KM. SUN AZM=259.7																				
LAC 20 COULUMB ; W>1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N.POLE NEAR SIDE BYRD,PEARY >80 N & LAC 5 PETERMANN, HAY																				
L 5	1	8	59.49N	111.50W	2	***	112211	8-06-67	LUNAR	ORB HI, 610MM B&W	-	NONE	2452K	4347541	285	9.7	8	-	.90	
CAM.NAD.= 58.88N 81.13W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4391.2 KM. SUN AZM=259.8																				
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN																				
L 5	2	8	59.72N	111.50W	2	***	112211	8-06-67	LUNAR	ORB LO,F=80MM B&W	-	NONE	2452K	33150000	286	9.6	8	-	.90	
CAM.NAD.= 58.88N 81.12W SWING= 91. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4391.2 KM. SUN AZM=259.8																				
LAC 20 COULUMB ; W>1/2 MOON SPHERE ; LUNAR N. HEMISPHE ; LAC 1 N.POLE NEAR SIDE BYRD,PEARY >80 N & LAC 5 PETERMANN, HAY																				
L 5	1	9	59.43N	111.43W	2	***	112213	8-06-67	LUNAR	ORB HI, 610MM B&W	-	NONE	2450K	4350820	285	9.6	8	-	.90	
CAM.NAD.= 58.85N 81.12W SWING= 89. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4393.2 KM. SUN AZM=259.9																				
LAC 20 COULUMB ; W1/4 MOONS SPHERE ; LAC 21 N.GERARD,B ; LAC 9 CREMONA & LAC 36 RONTGEN LOREN																				

HIS SION	MAG ROLL	FR. ON	PHOTO LAT.	PRIN. N	PT. LONG.	ORB N	GET TIMES=HR M SEC (ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	T AZ	L ANG. FR. VERT	SUN ANG. LAP S, S	SIDE, FWD. LAP S, S
L 5 2	9	59.65N	111.42W	2	000 0000	112214	8-06-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2654K	33175000	286	9.6	8	-.90
CAM.NAD.= 58.85N 81.11W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4393.2 KM. SUN AZM=259.8																	
LAC 20 COULOMB : >1/2 MOON SPHERE : LUNAR N. HEMISPHE : LAC 1 N. POLE NEARSIDE BYRD, PEARY >80 N 6 LAC 5 PETERMANN, HAY																	
L 5 1	10	59.37N	111.35W	2	000 0000	112216	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2655K	4357459	285	9.6	8	-.90
CAM.NAD.= 58.82N 81.11W SWING= 89. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4394.2 KM. SUN AZM=259.9																	
LAC 20 COULOMB : >1/4 MOONS SPHERE : LAC 21 N. GERARD, B : LAC 9 CREMONA 6 LAC 36 RONTGEN LOREN																	
L 5 2	10	59.59N	111.34W	2	000 0000	112216	8-06-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2656K	33200000	285	9.6	8	-.90
CAM.NAD.= 58.82N 81.10W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4395.2 KM. SUN AZM=259.9																	
LAC 20 COULOMB : >1/2 MOON SPHERE : LUNAR N. HEMISPHE : LAC 1 N. POLE NEARSIDE BYRD, PEARY >80 N 6 LAC 5 PETERMANN, HAY																	
L 5 1	11	59.30N	111.28W	2	000 0000	112219	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2657K	4356738	284	9.6	8	-.90
CAM.NAD.= 58.79N 81.10W SWING= 89. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4396.2 KM. SUN AZM=260.0																	
LAC 20 COULOMB : >1/4 MOONS SPHERE : LAC 21 N. GERARD, B : LAC 9 CREMONA 6 LAC 36 RONTGEN LOREN																	
L 5 2	11	59.52N	111.27W	2	000 0000	112219	8-06-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2657K	33212500	285	9.6	8	-.90
CAM.NAD.= 58.79N 81.09W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4396.2 KM. SUN AZM=260.0																	
LAC 20 COULOMB : >1/2 MOON SPHERE : LUNAR N. HEMISPHE : LAC 1 N. POLE NEARSIDE BYRD, PEARY >80 N 6 LAC 5 PETERMANN, HAY																	
L 5 1	12	59.24N	111.20W	2	000 0000	112221	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2659K	4359016	284	9.6	8	-.90
CAM.NAD.= 58.76N 81.09W SWING= 89. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4398.2 KM. SUN AZM=260.1																	
LAC 20 COULOMB : >1/4 MOONS SPHERE : LAC 21 N. GERARD, B : LAC 9 CREMONA 6 LAC 36 RONTGEN LOREN																	
L 5 2	12	59.46N	111.19W	2	000 0000	112222	8-06-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2659K	33237500	285	9.6	8	-.90
CAM.NAD.= 58.75N 81.08W SWING= 90. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4398.2 KM. SUN AZM=260.1																	
LAC 20 COULOMB : >1/2 MOON SPHERE : LUNAR N. HEMISPHE : LAC 1 N. POLE NEARSIDE BYRD, PEARY >80 N 6 LAC 5 PETERMANN, HAY																	
L 5 1	13	14.32N	102.40W	2	000 0000	133325	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5755K	9434426	279	7.6	3	-.00
CAM.NAD.= 11.15N 74.61W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7494.2 KM. SUN AZM=270.8																	
LAC 72 ELVEY NOBEL : >1/4 MOONS SPHERE : LAC 20 COULOMB : LAC 35 LANDAU 6 LAC 123 STEKLOV																	
L 5 1	14	14.27N	102.39W	2	000 0000	133328	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5756K	9436066	279	7.6	3	-.90
CAM.NAD.= 11.14N 74.61W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7495.2 KM. SUN AZM=270.8																	
LAC 72 ELVEY NOBEL : >1/4 MOONS SPHERE : LAC 20 COULOMB : LAC 35 LANDAU 6 LAC 123 STEKLOV																	
L 5 1	15	14.23N	102.38W	2	000 0000	133330	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5756K	9436066	279	7.6	3	-.90
CAM.NAD.= 11.13N 74.61W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7495.2 KM. SUN AZM=270.8																	
LAC 72 ELVEY NOBEL : >1/4 MOONS SPHERE : LAC 20 COULOMB : LAC 35 LANDAU 6 LAC 123 STEKLOV																	
L 5 1	16	14.18N	102.37W	2	000 0000	133333	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5757K	9437705	279	7.6	3	-.90
CAM.NAD.= 11.12N 74.60W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7496.2 KM. SUN AZM=271.6																	
LAC 72 ELVEY NOBEL : >1/4 MOONS SPHERE : LAC 20 COULOMB : LAC 35 LANDAU 6 LAC 123 STEKLOV																	
L 5 1	17	14.13N	102.36W	2	000 0000	133336	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5757K	9437705	279	7.6	3	-.90
CAM.NAD.= 11.11N 74.60W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7496.2 KM. SUN AZM=270.9																	
LAC 72 ELVEY NOBEL : >1/4 MOONS SPHERE : LAC 20 COULOMB : LAC 35 LANDAU 6 LAC 123 STEKLOV																	

L	S	#	MAG	FR. PHOTO OR MAIN	PRIN. PT. OR LAT.	ORB #	GET TIMES-HR	GHT H SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. PT. M=N, MI K=KM.	T I L T	SUN SIDE	FWD. LAP		
																	LONG.	(ESTIMATED)
L 5	1	18	14.04N	102.35W	2	000	0000	133338	8-06-67	LUNAR ORB HI, 610MM B&W	-	NONE	5758K	9439344	279	7.6	3	-90
CAM.NAD.= 11.10N 74.60W SWING= 92. PHASE= 122. EMIS.ANG.= 35.																		
LAC 72 ELVEY NOBEL ; 1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU																		
L 5	1	19	14.04N	102.34W	2	000	0000	133341	8-06-67	LUNAR ORB HI, 610MM B&W	-	NONE	5758K	9439344	279	7.6	3	-90
CAM.NAD.= 11.09N 74.60W SWING= 92. PHASE= 122. EMIS.ANG.= 35.																		
LAC 72 ELVEY NOBEL ; 1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU																		
L 5	1	20	14.00N	102.33W	2	000	0000	133344	8-06-67	LUNAR ORB HI, 610MM B&W	-	NONE	5758K	9439344	279	7.6	3	-90
CAM.NAD.= 11.08N 74.60W SWING= 92. PHASE= 122. EMIS.ANG.= 35.																		
LAC 72 ELVEY NOBEL ; 1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU																		
L 5	1	24	26.54N	120.17W	5	000	0000	135051	8-07-67	LUNAR ORB HI, 610MM B&W	-	NONE	5009K	8211475	281	8.9	8	-00
CAM.NAD.= 24.01N 89.35W SWING= 90. PHASE= 119. EMIS.ANG.= 37.																		
LAC 53 OHM FENSMAN ; 1/4 MOONS SPHERE ; LAC 135 PINGRE N. HAUSEN ; LAC 20 COULOMB ; LAC 89 S.E. HERTZS																		
L 5	1	25	59.08N	129.77W	6	000	0000	205019	8-07-67	LUNAR ORB HI, 610MM B&W	-	NONE	2551K	4181967	284	10.0	8	-00
CAM.NAD.= 58.75N 99.81W SWING= 89. PHASE= 107. EMIS.ANG.= 25.																		
LAC 20 COULOMB ; 1/4 MOONS SPHERE ; LAC 108 M. ORIENTIS ; LAC 109 PIAZZI, V. BOUVARD ; LAC 35 LANDAU																		
L 5	2	25	59.30N	129.76W	6	000	0000	205019	8-07-67	LUNAR ORB LO, F=80MM B&W	-	NONE	2552K	31900000	284	9.9	8	-00
CAM.NAD.= 58.75N 99.81W SWING= 90. PHASE= 107. EMIS.ANG.= 25.																		
LAC 20 COULOMB ; LUNAR DISC FARSID ; LUNAR W. HEMISPHE & LIMB OR HORIZON																		
L 5	1	28	26.39N	133.19W	8	000	0000	145230	8-08-67	LUNAR ORB HI, 610MM B&W	-	NONE	5015K	8221311	281	8.7	8	-00
CAM.NAD.= 24.16N 103.16W SWING= 90. PHASE= 118. EMIS.ANG.= 36.																		
LAC 52 JOULE E. MACH ; 1/4 MOONS SPHERE ; LAC 19 CARNOT ROW ; LAC 20 COULOMB ; LAC 89 S.E. HERTZSPRU																		
L 5	1	29	59.12N	147.18W	9	000	0000	215131	8-08-67	LUNAR ORB HI, 610MM B&W	-	NONE	2548K	4177049	284	11.0	11	-00
CAM.NAD.= 59.08N 113.56W SWING= 90. PHASE= 107. EMIS.ANG.= 28.																		
LAC 19 CARNOT ROW ; 1/4 MOONS SPHERE ; LAC 108 M. ORIENTIS ; LAC 134 BOLTZMANN ; LAC 20 COULOMB																		
L 5	2	39	38.84N	159.43W	19	000	0000	105252	8-10-67	LUNAR ORB LO, F=80MM B&W	-	NONE	1752K	15650000	283	26.8	10	-00
CAM.NAD.= 37.14N 128.86W SWING= 90. PHASE= 131. EMIS.ANG.= 51.																		
LAC 33 SCHNELLER ; 1/4 MOONS SPHERE ; LIMB OR HORIZON ; LAC 20 COULOMB ; LAC 52 JOULE E. MACH																		

TOTAL PHOTOS IN THIS GROUP = 30

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZI) & VERTICAL TO CAMERA AXIS  
(-),(+), ( ), OR(0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
H5B= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPEN;  
10 = AS EXPOS SPEED = 1/1000 FOR \* = TWO ZEROS;  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT

NIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SID
SION	ROLL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. F
#	#	MAIN	LONG.		(=ESTIMATED)			TYPE		M=N.M1	PT.	FR.	VERT
		#								K=KM.		VERT	
L 4	2	162	13.23N	62.18W	29	000	060208	5-23-67 LUNAR	ORB LO.F=80MM B6W	-	NONE	2670K 33375000	24.1 1.0 17
		CAM.NAD.=	13.93N	66.75W		SWING=	57.	PHASE=	71.	EMIS.ANG.=	3.	CAM.RAD.=	4409.2 KM.
		LAC 56	HEVELIUS,R	1		>1/2 MOON SPHERE	1	LAC 109	PIAZZI,V.	1	LAC 21	N.GERARD,BOOLE	6 LAC 25 CASSINI,ALPS
L 4	2	169	13.70N	68.49W	30	000	180302	5-23-67 LUNAR	ORB LO.F=80MM B6W	-	NONE	2672K 33400000	248 .8 17
		CAM.NAD.=	14.14N	67.33W		SWING=	62.	PHASE=	71.	EMIS.ANG.=	2.	CAM.RAD.=	4411.2 KM.
		LAC 56	HEVELIUS,R	1		>1/2 MOON SPHERE	1	LAC 109	PIAZZI,V.	1	LAC 21	N.GERARD,BOOLE	6 LAC 12 PLATO,ALPINE
L 4	2	174	13.37N	76.00W	31	000	060318	5-24-67 LUNAR	ORB LO.F=80MM B6W	-	NONE	2673K 33412500	255 1.3 16
		CAM.NAD.=	13.91N	73.95W		SWING=	69.	PHASE=	71.	EMIS.ANG.=	3.	CAM.RAD.=	4412.2 KM.
		LAC 55	VASCOUEGAM	1		>1/2 MOON SPHERE	1	LAC 109	PIAZZI,V.	1	LAC 21	N.GERARD,BOOLE	6 LAC 24 SINUS IRIDUM
L 4	2	181	13.09S	82.19W	32	000	173307	5-24-67 LUNAR	ORB LO.F=80MM B6W	-	NONE	2724K 34050000	76 .9 15
		CAM.NAD.=	14.40S	82.86W		SWING=	212.	PHASE=	76.	EMIS.ANG.=	2.	CAM.RAD.=	4463.2 KM.
		LAC 73	RICCIOLI,NE.ORIENTAL	1		>1/2 MOON SPHERE	1	LAC 143	S.HAUSEN LEGENTIL	1	LAC 21	N.GERARD,BOOLE	6 LAC 21 N.GERARD,BOOLE
L 4	2	182	15.26N	81.42W	32	000	180342	5-24-67 LUNAR	ORB LO.F=80MM B6W	-	NONE	2674K 33425000	329 1.0 16
		CAM.NAD.=	13.88N	80.57W		SWING=	143.	PHASE=	72.	EMIS.ANG.=	3.	CAM.RAD.=	4413.2 KM.
		LAC 55	VASCOUEGAM	1		>1/2 MOON SPHERE	1	LAC 123	STEKLOV	1	LAC 21	N.GERARD,BOOLE	6 LAC 24 SINUS IRIDUM
L 4	2	188	13.39N	89.22W	33	000	060409	5-25-67 LUNAR	ORB LO.F=80MM B6W	-	NONE	2675K 33437500	255 1.3 15
		CAM.NAD.=	13.92N	87.19W		SWING=	69.	PHASE=	72.	EMIS.ANG.=	3.	CAM.RAD.=	4414.2 KM.
		LAC 55	VASCOUEGAM	1		>1/2 MOON SPHERE	1	LAC 123	STEKLOV	1	LAC 21	N.GERARD,BOOLE	6 LAC 24 SINUS IRIDUM
L 4	1	189	41.71N	79.99W	33	000	063636	5-25-67 LUNAR	ORB HI. 610MM B6W	-	NONE	2878K 4718033	110 1.9 18
		CAM.NAD.=	42.88N	84.00W		SWING=	273.	PHASE=	77.	EMIS.ANG.=	5.	CAM.RAD.=	4417.2 KM.
		WESTERN PART OF	LAC 22	SE.GERARD,BUNSEN,HARDING	1			LAC 21	N.GERARD,B	6	LAC 10	BARRAGE,N.PROCELARH.	6 LAC 10 BARRAGE,N.PROCELARH.
L 5	1	5	59.69N	111.74W	2	000	112203	8-06-67 LUNAR	ORB HI. 610MM B6W	-	NONE	2647K 4339344	285 9.7 8
		CAM.NAD.=	58.97N	81.16W		SWING=	90.	PHASE=	107.	EMIS.ANG.=	25.	CAM.RAD.=	4386.2 KM.
		LAC 20	COULUMB	1		>1/4 MOONS SPHERE	1	LAC 21	N.GERARD,B	1	LAC 9	CREMONA	6 LAC 36 RONTGEN LORE
L 5	1	6	59.63N	111.66W	2	000	112205	8-06-67 LUNAR	ORB HI. 610MM B6W	-	NONE	2648K 4340984	285 9.7 8
		CAM.NAD.=	58.94N	81.15W		SWING=	90.	PHASE=	107.	EMIS.ANG.=	25.	CAM.RAD.=	4387.2 KM.
		LAC 20	COULUMB	1		>1/4 MOONS SPHERE	1	LAC 21	N.GERARD,B	1	LAC 9	CREMONA	6 LAC 36 RONTGEN LORE

HIS SION	MAG ROLL	FR. OR MAIN	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HH M SEC (ESTIMATED)	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE M=N.M; K=KM.	SCALE AT PRIN. PT.	T I L T AZ FR.	SUN SIDE, ANG. ANG. FWD VERT B, S	
L 5	1	7	59.56N	111.58W	2	***	112208	8-06-67	LUNAR	ORB HI. 610MM B&W	- NONE	2650K	4344242	285	9.7 8	-9.0
												CAM-RAD. =	4389.2 KM.	SUN AZM=259.7		
													6	LAC 36	RONTGEN LOREN	
L 5	1	8	59.49N	111.50W	2	***	112211	8-06-67	LUNAR	ORB HI. 610MM B&W	- NONE	2652K	4347541	285	9.7 8	-9.0
												CAM-RAD. =	4391.2 KM.	SUN AZM=259.8		
													6	LAC 36	RONTGEN LOREN	
L 5	1	9	59.43N	111.43W	2	***	112213	8-06-67	LUNAR	ORB HI. 610MM B&W	- NONE	2654K	4350820	285	9.6 8	-9.0
												CAM-RAD. =	4393.2 KM.	SUN AZM=259.9		
													6	LAC 36	RONTGEN LOREN	
L 5	1	10	59.37N	111.35W	2	***	112216	8-06-67	LUNAR	ORB HI. 610MM B&W	- NONE	2655K	4352459	285	9.6 8	-9.0
												CAM-RAD. =	4394.2 KM.	SUN AZM=259.9		
													6	LAC 36	RONTGEN LOREN	
L 5	1	11	59.30N	111.28W	2	***	112219	8-06-67	LUNAR	ORB HI. 610MM B&W	- NONE	2657K	4355738	284	9.6 8	-9.0
												CAM-RAD. =	4396.2 KM.	SUN AZM=260.0		
													6	LAC 36	RONTGEN LOREN	
L 5	1	12	59.24N	111.20W	2	***	112221	8-06-67	LUNAR	ORB HI. 610MM B&W	- NONE	2659K	4359016	284	9.6 8	-9.0
												CAM-RAD. =	4398.2 KM.	SUN AZM=260.1		
													6	LAC 36	RONTGEN LOREN	

TOTAL PHOTOS IN THIS GROUP = 15



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S. ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+),1), UN(0) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREN; 2P,2B,2S = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 = AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	I	L	T	SUN	SIDE,	
SIUN	ROLL	OR	LAT.	#	TIMES-HR	M SEC	(E=ESTIMATED)			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.				
#	#	MAIN	LONG.							TYPE		M=N.M]	PT.	FR.	VERT						
L 4	2	156	14.87S	55.80W	28	000	173043	5-22-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2722K	34025000	135	.4	17	-.			
			CAM.NAD.= 14.39S	56.29W			SWING= 321.		PHASE= 74.	EMIS.ANG.= 1.		CAM.RAD.=	4461.2 KM.				SUN	AZM= 84.7			
			LAC 74 GRIMALDI, B				W>1/2 MOON SPHERE		LAC 136 BAILLEY, K									LAC 22 SE.GERARD,BUNSEN,HARDING			
																			LAC 40 TIMOCHARIS, LA		
L 4	2	161	15.13S	61.98W	29	000	053134	5-23-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2723K	34037500	129	.8	17	-.			
			CAM.NAD.= 14.36S	62.04W			SWING= 315.		PHASE= 75.	EMIS.ANG.= 2.		CAM.RAD.=	4462.2 KM.				SUN	AZM= 84.7			
			LAC 74 GRIMALDI, B				W>1/2 MOON SPHERE		LAC 136 BAILLEY, K									LAC 22 SE.GERARD,BUNSEN,HARDING			
																			LAC 58 COPERNICUS, RE		
L 4	2	164	70.20N	41.50W	29	000	071247	5-23-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3346K	41825000	136	1.4	13	-.			
			CAM.NAD.= 72.26N	47.11W			SWING= 313.		PHASE= 81.	EMIS.ANG.= 4.		CAM.RAD.=	5085.2 KM.				SUN	AZM= 126.8			
			LAC 2 ANAXIMENES, PASCAL				W>1/2 MOON SPHERE		LAC 22 SE.GERARD,BUNSEN, I									LAC 15 M.HUMBOLDTIUM			
																			LAC 42 M.SERENITY		
L 4	2	168	14.44S	68.18W	30	000	173229	5-23-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2722K	34025000	103	.9	17	-.			
			CAM.NAD.= 14.14S	69.56W			SWING= 288.		PHASE= 76.	EMIS.ANG.= 2.		CAM.RAD.=	4461.2 KM.				SUN	AZM= 84.9			
			LAC 74 GRIMALDI, B				W>1/2 MOON SPHERE		LAC 124 PHOCLIDE									LAC 22 SE.GERARD,BUNSEN,HARDING			
																			LAC 57 KEPLER, ENCKE		
L 4	1	170	41.77N	59.60W	30	000	183518	5-23-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2871K	4704557	108	2.2	20	-.			
			CAM.NAD.= 43.00N	64.22W			SWING= 271.		PHASE= 76.	EMIS.ANG.= 6.		CAM.RAD.=	4610.2 KM.				SUN	AZM= 107.7			
			LAC 23 RUMKER, SHARP						LAC 22 SE.GERARD,BUNSEN,HARDING									LAC 10 BABBAGE, N.PROCCLARM.			
																			LAC 11 J.HERSCHEL, J		
L 4	1	175	41.29N	66.78W	31	000	063541	5-24-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2872K	4704197	116	2.0	19	-.			
			CAM.NAD.= 42.86N	70.79W			SWING= 280.		PHASE= 76.	EMIS.ANG.= 5.		CAM.RAD.=	4611.2 KM.				SUN	AZM= 106.8			
			LAC 22 SE.GERARD,BUNSEN,HARDING						LAC 23 RUMKER, SHARP									LAC 10 BABBAGE, N.PROCCLARM.			
																			LAC 1 J.HERSCHEL, J		
L 4	2	175	41.29N	66.78W	31	000	063541	5-24-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2872K	35900000	116	2.0	19	-.			
			CAM.NAD.= 42.86N	70.79W			SWING= 279.		PHASE= 76.	EMIS.ANG.= 5.		CAM.RAD.=	4611.2 KM.				SUN	AZM= 106.8			
			LAC 22 SE.GERARD,BUNSEN,HARDING				W>1/2 MOON SPHERE											LAC 73 RICCIOLI, NE.ORIENTAL			
																			LAC 1 N.POLE NEARSI		
L 4	1	182	15.26N	81.41W	32	000	180342	5-24-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2674K	4383607	329	1.0	16	-.			
			CAM.NAD.= 13.88N	80.57W			SWING= 193.		PHASE= 72.	EMIS.ANG.= 3.		CAM.RAD.=	4413.2 KM.				SUN	AZM= 93.7			
			CENTRAL PART OF LAC 55 VASCOGEM						CENTRAL PART OF LAC 37 STRUVE, DAL									LAC 73 RICCIOLI, NE.ORIENT			
																			LAC 22 SE.GERARD,BUN		
L 4	1	183	43.53N	71.02W	32	000	183607	5-24-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2874K	4711475	79	2.8	20	-.			
			CAM.NAD.= 42.84N	77.39W			SWING= 293.		PHASE= 77.	EMIS.ANG.= 8.		CAM.RAD.=	4613.2 KM.				SUN	AZM= 108.9			
			EASTERN PART OF LAC 22 SE.GERARD,BUNSEN,HARDING																LAC 23 RUMKER, SHA		
																			LAC 37 STRUVE, DALTON		

L	4	2	183	43.53N	71.02W	32	***	****	183607	5-24-67	LUNAR	ORB	LU.F=80MM	B&W	-	NONE	2874K	35925000	79	2.8	20	-.90
CAM.NAD.= 42.84N 77.39W SWING= 242. PHASE= 77. EMIS.ANG.= 8. CAM.RAD.= 4613.2 KM. SUN AZH=108.9																						
LAC 22 SE.GERARD,BUNSEN,HARDING ; >1/2 MOON SPHERE ; LAC 90 LOWELL ; LAC 1 N.POLE NEARS																						
L	4	1	189	41.71N	79.99W	33	***	****	063636	5-25-67	LUNAR	ORB	HI. 610MM	B&W	-	NONE	2878K	4718033	110	1.9	18	-.77
CAM.NAD.= 42.88N 84.00W SWING= 273. PHASE= 77. EMIS.ANG.= 5. CAM.RAD.= 4617.2 KM. SUN AZH=106.1																						
WESTERN PART OF LAC 22 SE.GERARD,BUNSEN,HARDING ; LAC 21 N.GERARD,B & LAC 1R BABBAGE,N.PROCFLARH.																						
L	4	2	189	41.72N	79.99W	33	***	****	063636	5-25-67	LUNAR	ORB	LU.F=80MM	B&W	-	NONE	2878K	35975000	110	1.9	18	-.90
CAM.NAD.= 42.88N 84.00W SWING= 273. PHASE= 77. EMIS.ANG.= 5. CAM.RAD.= 4617.2 KM. SUN AZH=106.1																						
LAC 22 SE.GERARD,BUNSEN,HARDING ; >1/2 MOON SPHERE ; LAC 10B M.ORIEN(SW 1/3 W) ; LAC 1 N.POLE NEARS																						

TOTAL PHOTOS IN THIS GROUP = 12

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (O) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; LKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZH,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 \* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 OR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	PHOTO	PRIN.PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	I	L	T	SUN	SIDE,
SIGN	ROLL	OR	LAT.	#	TIMES-HR	M	SEC	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.			
#	#	MAIN	LUNG.		(I=ESTIMATED)			TYPE		M=N.MI	PT.	FR.	LAP					
										K=KM.		VERT	R. S					
L 4	2	125	14.89S	22.97W	23	***	052314	5-20-67 LUNAR ORB LO.F=80MM R&W	-	NONE	2717K	33962500	170	.3	19	-.90		
		CAM.NAD.= 14.40S	23.06W		SWING= 356.		PHASE= 71.	EMIS.ANG.= 1.		CAM.RAD.=	4456.2 KM.		SUN AZM= 04.2					
		LAC 76 RIPHAEUS M			>1/2 MOON SPHERE		LAC 128 BIELA,WAT	LAC 23 RUMKER,SHARP					& LAC 26 EUDOXUS,BURG					
L 4	2	143	14.29S	41.41W	26	***	172822	5-21-67 LUNAR ORB LO.F=80MM R&W	-	NONE	2719K	33987500	185	1.0	19	-.8		
		CAM.NAD.= 14.41S	42.98W		SWING= 271.		PHASE= 74.	EMIS.ANG.= 3.		CAM.RAD.=	4458.2 KM.		SUN AZM= 04.3					
		LAC 75 LETHONNE.F			>1/2 MOON SPHERE		LAC 128 BIELA,WAT	LAC 23 RUMKER,SHARP					& LAC 41 APENNINES,HAE					
L 4	1	145	42.33N	33.70W	26	***	183109	5-21-67 LUNAR ORB HI. 610MM R&W	-	NONE	2868K	4701639	96	2.1	21	-.70		
		CAM.NAD.= 42.81N	38.27W		SWING= 260.		PHASE= 75.	EMIS.ANG.= 5.		CAM.RAD.=	4607.2 KM.		SUN AZM=109.1					
		EASTERN PART OF	LAC 24 SINUS IRIDUM					LAC 23 RUMKER,SHA	& LAC 11 J.HERSCHEL,JURAS,ROUGUER									
L 4	1	151	40.88N	40.20W	27	***	063228	5-22-67 LUNAR ORB HI. 610MM R&W	-	NONE	2866K	4698361	118	2.4	21	-.76		
		CAM.NAD.= 42.84N	44.74W		SWING= 282.		PHASE= 75.	EMIS.ANG.= 6.		CAM.RAD.=	4605.2 KM.		SUN AZM=108.3					
		EASTERN PART OF	LAC 23 RUMKER,SHARP					LAC 24 SINUS IRID	& LAC 11 J.HERSCHEL,JURAS,ROUGUER									
L 4	2	151	40.88N	40.20W	27	***	063228	5-22-67 LUNAR ORB LO.F=80MM R&W	-	NONE	2866K	35825000	118	2.4	21	-.88		
		CAM.NAD.= 42.84N	44.74W		SWING= 282.		PHASE= 75.	EMIS.ANG.= 6.		CAM.RAD.=	4605.2 KM.		SUN AZM=108.3					
		LAC 23 RUMKER,SHA			>1/2 MOON SPHERE		LAC 74 GRIMALDI,B	LAC 1 N.POLE NEARSIDE BYRD,PEARY	>80 N	& LAC 13 ARISTOTE..M.F								
L 4	1	158	41.99N	47.66W	28	***	183333	5-22-67 LUNAR ORB HI. 610MM R&W	-	NONE	2866K	4698361	106	1.7	20	-.78		
		CAM.NAD.= 42.85N	51.22W		SWING= 271.		PHASE= 75.	EMIS.ANG.= 4.		CAM.RAD.=	4605.2 KM.		SUN AZM=107.7					
		EASTERN PART OF	LAC 23 RUMKER,SHAR				LAC 24 SINUS IRIDU	LAC 111 WILHELM.E	LAC 38 SELEUCUS,SCHROTER V.	& LAC 39 ARISTARCH								
L 4	2	158	42.00N	47.66W	28	***	183333	5-22-67 LUNAR ORB LO.F=80MM R&W	-	NONE	2866K	35825000	106	1.7	20	-.88		
		CAM.NAD.= 42.85N	51.22W		SWING= 271.		PHASE= 75.	EMIS.ANG.= 4.		CAM.RAD.=	4605.2 KM.		SUN AZM=107.7					
		LAC 23 RUMKER,SHARP			>1/2 MOON SPHERE			LAC 73 RICCIOLI,NE.ORIENTAL	& LAC 1 N.POLE NEARSIDE									
L 4	1	163	41.21N	53.38W	29	***	063426	5-23-67 LUNAR ORB HI. 610MM R&W	-	NONE	2867K	4700000	115	2.2	20	-.76		
		CAM.NAD.= 42.87N	57.71W		SWING= 279.		PHASE= 76.	EMIS.ANG.= 6.		CAM.RAD.=	4606.2 KM.		SUN AZM=107.7					
		CENTRAL PART OF	LAC 23 RUMKER,SHARP				LAC 10 BABBAGE,N.PR	LAC 11 J.HERSCHEL,J	NORTHERN PART OF LAC 38 SELEUCUS,SCH									
L 4	2	163	41.22N	53.38W	29	***	063426	5-23-67 LUNAR ORB LO.F=80MM R&W	-	NONE	2867K	35837500	115	2.2	20	-.88		
		CAM.NAD.= 42.87N	57.71W		SWING= 279.		PHASE= 76.	EMIS.ANG.= 6.		CAM.RAD.=	4606.2 KM.		SUN AZM=107.7					
		LAC 23 RUMKER,SHARP			>1/2 MOON SPHERE			LAC 73 RICCIOLI,NE.ORIENTAL	& LAC 1 N.POLE NEARSIDE									

MIS SION	MAG KULL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HR	GHT H SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN.	AT PT.	T I L T AZ	SUN ANG.	SIDE, ANG.	FWD. LAP
#	#	MAIN					(:=ESTIMATED)					M=N.MI K=KM.				FR. VERT		
L 4	1	170	41.77N	59.60W	30	***	183518	5-23-67	LUNAR ORB HI. 610MM B&W	-	NONE	2871K	4706557	108	2.2	20	-75	
CAM.NAD.= 43.00N 64.22W SWING= 271. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4610.2 KM. SUN AZH=107.7																		
LAC 23 RUMKER, SHARP ; LAC 22 SE.GERARD, BUNSEN, HARDING; LAC 10 BABBAGE, N. PROCELARM. 6 LAC 11 J.HERSCHEL, J																		
L 4	2	170	41.78N	59.60W	30	***	183518	5-23-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2871K	35887500	108	2.2	20	-19	
CAM.NAD.= 43.00N 64.22W SWING= 271. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4610.2 KM. SUN AZH=107.7																		
LAC 23 RUMKER, SHARP ; >1/2 MOON SPHERE ; LAC 73 RICCIOLI, NE.ORIENTAL 6 LAC 6																		
L 4	1	175	41.29N	66.78W	31	***	063541	5-24-67	LUNAR ORB HI. 610MM B&W	-	NONE	2872K	4708197	116	2.0	19	-76	
CAM.NAD.= 42.86N 70.79W SWING= 280. PHASE= 76. EMIS.ANG.= 5. CAM.RAD.= 4611.2 KM. SUN AZH=106.8																		
LAC 24 SE.GERARD, BUNSEN, HARDING ; LAC 23 RUMKER, SHARP ; LAC 10 BABBAGE, N. PROCELARM. 6 LAC 11 J.HERSCHEL, J																		
L 4	1	183	43.53N	71.02W	32	***	183607	5-24-67	LUNAR ORB HI. 610MM B&W	-	NONE	2874K	4711475	79	2.8	20	-79	
CAM.NAD.= 42.84N 77.39W SWING= 243. PHASE= 77. EMIS.ANG.= 8. CAM.RAD.= 4613.2 KM. SUN AZH=108.9																		
EASTERN PART OF LAC 22 SE.GERARD, BUNSEN, HARDING ; LAC 23 RUMKER, SHA 6 LAC 37 STRUVE, DALTON																		
L 5	1	182	34.46N	41.50W	76	***	232947	8-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	167K	273770	302	5.5	15	-..	
CAM.NAD.= 34.67N 40.95W SWING= 207. PHASE= 69. EMIS.ANG.= 6. CAM.RAD.= 1906.2 KM. SUN AZH= 99.3																		
S. E. PART OF LAC 23 RUMKER, SHARP																		
L 5	2	182	34.97N	41.52W	76	***	232948	8-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	167K	2087500	302	5.7	15	-..	
CAM.NAD.= 34.68N 40.95W SWING= 207. PHASE= 69. EMIS.ANG.= 6. CAM.RAD.= 1906.2 KM. SUN AZH= 99.3																		
S. E. PART OF LAC 23 RUMKER, SHARP																		
L 5	1	183	35.43N	41.45W	76	***	232955	8-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	169K	277049	306	5.7	15	-1.7	
CAM.NAD.= 35.09N 40.90W SWING= 211. PHASE= 69. EMIS.ANG.= 6. CAM.RAD.= 1908.2 KM. SUN AZH= 99.5																		
S. E. PART OF LAC 23 RUMKER, SHARP																		
L 5	2	183	35.44N	41.47W	76	***	232955	8-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	169K	2112500	305	5.9	15	-1.87	
CAM.NAD.= 35.16N 40.90W SWING= 210. PHASE= 69. EMIS.ANG.= 6. CAM.RAD.= 1908.2 KM. SUN AZH= 99.5																		
S. E. PART OF LAC 23 RUMKER, SHARP																		
L 5	1	184	35.89N	41.40W	76	***	233003	8-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	171K	280378	309	6.0	15	-1.8	
CAM.NAD.= 35.51N 40.84W SWING= 214. PHASE= 69. EMIS.ANG.= 7. CAM.RAD.= 1910.2 KM. SUN AZH= 99.6																		
S. E. PART OF LAC 23 RUMKER, SHARP																		
L 5	2	184	35.90N	41.42W	76	***	233003	8-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	171K	2137500	309	6.1	15	-1.87	
CAM.NAD.= 35.52N 40.84W SWING= 214. PHASE= 69. EMIS.ANG.= 7. CAM.RAD.= 1910.2 KM. SUN AZH= 99.6																		
S. E. PART OF LAC 23 RUMKER, SHARP																		
L 5	1	185	36.36N	41.35W	76	***	233011	8-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	173K	283607	313	6.2	15	-1.9	
CAM.NAD.= 35.93N 40.79W SWING= 218. PHASE= 69. EMIS.ANG.= 7. CAM.RAD.= 1912.2 KM. SUN AZH= 99.8																		
S. E. PART OF LAC 23 RUMKER, SHARP																		
L 5	2	185	36.37N	41.36W	76	***	233011	8-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	173K	2167500	312	6.3	15	-1.87	
CAM.NAD.= 35.94N 40.79W SWING= 217. PHASE= 69. EMIS.ANG.= 7. CAM.RAD.= 1912.2 KM. SUN AZH= 99.8																		
S. F. PART OF LAC 23 RUMKER, SHARP																		

MIS SION	MAG ROLL	FR, PHOTO ON	PRIN. PT. LAT.	UNB " "	GET TIMES-HH M SEC	GHT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUBE PRIN.	T I L T AZ ANG.	SUN SIDE, ANG. FWD.
"	"	MAIN	LONG.	"	(I=ESTIMATED)				M=N.MI K=KM.	PT. VERT	FR. S. S

TOTAL PHOTOS IN THIS GROUP = 21

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+), ( ), (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW-A = SUPER WIDE ANGLE LENS; EKTR=EKTRAR 2.8 LENS;  
 HSB=HASSELBLADI HAUER=HAURER; ZP,ZB,ZS = ZEISS LENS; PLANAR,BIDGEN,SONAR; FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS DIFFER = 1/2 MOON FOR TWO ZEROS  
 FOR LUNAR ORBITER X ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPL TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0,0

MIS	MAG	PH	PHOTO	PRIN.PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	L	T	SUN	SIDE,
SUN	KULL	OR	LAT.			T	M		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.		
#	#	#	MAIN	LONG.		(=ESTIMATED)			TYPE		M=N-MI	PT.	FR.	LAP				
											K=KM.		VERT					
L 4	1	122	42.07N	9.24W	22	***	0000	182411	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2895K	4795902	105	1.4	21	-.77
CAM-RAD.= 42.76N 12.27W SWING= 270. PHASE= 73. EMIS-ANG.= 4. CAM-RAD.= 4634.2 KM. SUN AZH=109.1																		
WESTERN PART OF LAC 25 CASSINI,ALP; LAC 24 SINUS IRIDU; LAC 12 PLATO,ALPI; LAC 40 TIMOCHARIS,LAMBERT & LAC 41 APENNINES																		
L 4	1	127	41.20N	14.29W	23	***	0000	062610	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	2886K	4731148	114	2.2	22	-.77
CAM-RAD.= 42.80N 18.79W SWING= 278. PHASE= 74. EMIS-ANG.= 6. CAM-RAD.= 4625.2 KM. SUN AZH=109.6																		
EASTERN PART OF LAC 24 SINUS IRID; WESTERN PART OF LAC 25 CASSINI,ALP; LAC 12 PLATO,ALPINE VAL. & LAC 40 TIMOCHARIS,LA																		
L 4	2	127	41.21N	14.29W	23	***	0000	062610	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2886K	36075000	114	2.2	22	-.29
CAM-RAD.= 42.81N 18.79W SWING= 278. PHASE= 74. EMIS-ANG.= 6. CAM-RAD.= 4625.2 KM. SUN AZH=109.6																		
LAC 24 SINUS IRID; W>1/2 MOON SPHERE; LAC 76 RIPHAEUS M; LAC 1 N.POLE NEARSIDE BYRD,PFARY >80 N & LAC 146 N.POLE FARIS;																		
L 4	1	133	18.73N	29.69W	24	***	0000	175540	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	2873K	4381947	340	3.3	19	-.46
CAM-RAD.= 13.91N 27.86W SWING= 156. PHASE= 68. EMIS-ANG.= 8. CAM-RAD.= 4612.2 KM. SUN AZH= 95.9																		
WESTERN PART OF LAC 40 TIMOCHARIS,LAMBERT & LAC 39 ARISTARCHU & LAC 58 COPERNICUS,REINHOLD																		
L 4	1	134	46.31N	18.14W	24	***	0000	182759	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	2870K	4718033	53	3.7	21	-.26
CAM-RAD.= 42.80N 25.30W SWING= 218. PHASE= 74. EMIS-ANG.= 10. CAM-RAD.= 4617.2 KM. SUN AZH=113.2																		
EASTERN PART OF LAC 24 SINUS IRIDU; LAC 25 CASSINI,ALP; LAC 12 PLATO,ALPI; LAC 40 TIMOCHARIS,LAMBERT & LAC 3 PHILOLAUS,																		
L 4	2	134	46.31N	18.14W	24	***	0000	182759	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2879K	35987500	53	3.7	21	-.39
CAM-RAD.= 42.80N 25.31W SWING= 218. PHASE= 74. EMIS-ANG.= 10. CAM-RAD.= 4618.2 KM. SUN AZH=113.2																		
LAC 24 SINUS IRID; W>1/2 MOON SPHERE; LAC 75 LETRONNE,F; LAC 1 N.POLE NEARSIDE BYRD,PFARY >80 N & LAC 14 ENDYMION,STRA																		
L 4	1	139	42.16N	28.25W	25	***	0000	062940	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	2872K	4708197	102	1.6	20	-.78
CAM-RAD.= 42.81N 31.79W SWING= 267. PHASE= 74. EMIS-ANG.= 4. CAM-RAD.= 4613.2 KM. SUN AZH=108.6																		
CENTRAL PART OF LAC 24 SINUS IRID; LAC 11 J.HERSCHEL,JURAS,BOUGUER & LAC 12 PLATO,ALPINE VAL.																		
L 4	2	139	42.17N	28.25W	25	***	0000	062940	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2872K	35900000	102	1.6	20	-.24
CAM-RAD.= 42.82N 31.79W SWING= 267. PHASE= 74. EMIS-ANG.= 4. CAM-RAD.= 4611.2 KM. SUN AZH=108.6																		
LAC 24 SINUS IRID; W>1/2 MOON SPHERE; LAC 74 GRIMALDI,B; LAC 1 N.POLE NEARSIDE BYRD,PFARY >80 N & LAC 14 ENDYMION,STRA																		
L 4	1	145	42.33N	33.76W	26	***	0000	183109	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	2868K	4701639	96	2.1	21	-.70
CAM-RAD.= 42.81N 38.27W SWING= 260. PHASE= 75. EMIS-ANG.= 5. CAM-RAD.= 4607.2 KM. SUN AZH=109.1																		
WESTERN PART OF LAC 24 SINUS IRIDUM & LAC 23 RUMKER,SHA & LAC 11 J.HERSCHEL,JURAS,BOUGUER																		

MIS SION	MAG ROLL	FR. PHOTO ON	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR M SEC (I=ESTIMATED)	GMT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT: SCALE AT TUDE PRIN. PT. M=N.HI K=KM.	T I L T AZ ANG. FR. VERT	SUN SIDE ANG. ANG. FNO. LAP
L 4	2	145	42.34N	33.70W	26 ***	183109	S-21-67 LUNAR ORB LO.F=80MM R6W	-	NONE 2868K 35850000	94 2.1 21	-.00
			CAM.NAD.= 42.82N	38.27W	SWING= 260.		PHASE= 75. EMIS.ANG.= 5.	CAM.RAD.= 4607.2 KM.		SUN AZM=109.1	
			LAC 24 SINUS IRID	W>1/2 MOON SPHERE			LAC 74 GRIMALDI, B	LAC 5 PETERMANN, HAYN		6 LAC 14 ENDYMION, STRA	
L 4	1	151	40.88N	40.20W	27 ***	063228	S-22-67 LUNAR ORB HI. 610MM R6W	-	NONE 2866K 4698361	118 2.4 21	-.76
			CAM.NAD.= 42.84N	44.74W	SWING= 282.		PHASE= 75. EMIS.ANG.= 6.	CAM.RAD.= 4405.2 KM.		SUN AZM=108.3	
			EASTERN PART OF	LAC 23 HUMKER, SHARP			LAC 24 SINUS IRID	LAC 11 J.HERSCHEL, JURAS, ROUGER			
L 4	1	152	67.78N	29.61W	27 ***	071044	S-22-67 LUNAR ORB HI. 610MM R6W	-	NONE 3345K 5483607	142 1.5 13	-.15
			CAM.NAD.= 72.22N	34.79W	SWING= 321.		PHASE= 81. EMIS.ANG.= 4.	CAM.RAD.= 5084.2 KM.		SUN AZM=126.4	
			LAC 3 PHILOLAUS, BARRON				LAC 2 ANAXIMENES, PASCAL	LAC 11 J.HERSCHEL, JURAS, ROUGER		LAC 1 N. POLE NEARS	
L 4	1	158	41.99N	47.66W	28 ***	183333	S-22-67 LUNAR ORB HI. 610MM R6W	-	NONE 2866K 4698361	106 1.7 20	-.78
			CAM.NAD.= 42.85N	51.22W	SWING= 271.		PHASE= 75. EMIS.ANG.= 4.	CAM.RAD.= 4405.2 KM.		SUN AZM=107.7	
			EASTERN PART OF	LAC 23 HUMKER, SHAR			LAC 24 SINUS IRID	LAC 111 WILHELM, E		LAC 38 SELENCUS, SCHROTER V.	6 LAC 39 ARISTARCH
L 4	2	174	13.37N	76.00W	31 ***	060318	S-24-67 LUNAR ORB LO.F=80MM R6W	-	NONE 2673K 33412500	255 1.3 16	-.50
			CAM.NAD.= 13.91N	73.95W	SWING= 69.		PHASE= 71. EMIS.ANG.= 3.	CAM.RAD.= 4412.2 KM.		SUN AZM= 93.0	
			LAC 55 VASCOUEGAM	W>1/2 MOON SPHERE			LAC 109 PIAZZI, V.	LAC 21 N. GERARD, BOOLE		6 LAC 24 SINUS IRIDUM	
L 4	2	182	15.26N	81.42W	32 ***	180342	S-24-67 LUNAR ORB LO.F=80MM R6W	-	NONE 2674K 33425000	329 1.0 16	-.66
			CAM.NAD.= 13.88N	80.57W	SWING= 143.		PHASE= 72. EMIS.ANG.= 3.	CAM.RAD.= 4413.2 KM.		SUN AZM= 93.7	
			LAC 55 VASCOUEGAM	W>1/2 MOON SPHERE			LAC 123 STEKLOV	LAC 21 N. GERARD, BOOLE		6 LAC 24 SINUS IRIDUM	
L 4	2	188	13.39N	89.22W	33 ***	060409	S-25-67 LUNAR ORB LO.F=80MM R6W	-	NONE 2675K 33437500	255 1.3 15	-.78
			CAM.NAD.= 13.92N	87.19W	SWING= 69.		PHASE= 72. EMIS.ANG.= 3.	CAM.RAD.= 4414.2 KM.		SUN AZM= 92.7	
			LAC 55 VASCOUEGAM	W>1/2 MOON SPHERE			LAC 123 STEKLOV	LAC 21 N. GERARD, BOOLE		6 LAC 24 SINUS IRIDUM	
L 5	2	102	48.21N	1.04E	49 ***	093823	8-14-67 LUNAR ORB LO.F=80MM R6W	-	NONE 250K 31250000	240 34.1 12	-.00
			CAM.NAD.= 51.30N	8.67E	SWING= 178.		PHASE= 54. EMIS.ANG.= 40.	CAM.RAD.= 1989.2 KM.		SUN AZM=101.8	
			SOUTHERN PART OF	LAC 12 PLATO, ALPINE VAL.			NORTHERN PART OF	LAC 25 CASSINI, AL		N. E. PART OF	LAC 24 SINUS IRIDUM
L 5	1	159	31.82N	22.16W	65 ***	122817	8-16-67 LUNAR ORB HI. 610MM R6W	-	NONE 155K 254098	11 2.3 17	-.00
			CAM.NAD.= 31.02N	22.20W	SWING= 276.		PHASE= 73. EMIS.ANG.= 3.	CAM.RAD.= 1894.2 KM.		SUN AZM= 99.3	
			NORTHERN PART OF	LAC 40 TIMOCHARIS, LAMBERT			6 S. E. PART OF	LAC 24 SINUS IRIDUM			
L 5	2	159	31.83N	22.17W	65 ***	122817	8-16-67 LUNAR ORB LO.F=80MM R6W	-	NONE 155K 1937500	7 2.3 17	-.00
			CAM.NAD.= 31.63N	22.20W	SWING= 272.		PHASE= 73. EMIS.ANG.= 3.	CAM.RAD.= 1894.2 KM.		SUN AZM= 99.3	
			NORTHERN PART OF	LAC 40 TIMOCHARIS, LAMBERT			6 SOUTHERN PART OF	LAC 24 SINUS IRIDUM			
L 5	1	160	32.25N	22.11W	65 ***	122824	8-16-67 LUNAR ORB HI. 610MM R6W	-	NONE 156K 255738	10 2.7 17	-.8
			CAM.NAD.= 32.01N	22.16W	SWING= 275.		PHASE= 73. EMIS.ANG.= 3.	CAM.RAD.= 1895.2 KM.		SUN AZM= 99.5	
			S. E. PART OF	LAC 24 SINUS IRIDUM			6 NORTHERN PART OF	LAC 40 TIMOCHARIS, LAMBERT			
L 5	2	160	32.26N	22.12W	65 ***	122824	8-16-67 LUNAR ORB LO.F=80MM R6W	-	NONE 156K 19500000	7 2.7 17	-.87
			CAM.NAD.= 32.02N	22.16W	SWING= 272.		PHASE= 73. EMIS.ANG.= 3.	CAM.RAD.= 1895.2 KM.		SUN AZM= 99.5	
			SOUTHERN PART OF	LAC 24 SINUS IRIDUM			6 NORTHERN PART OF	LAC 40 TIMOCHARIS, LAMBERT			

MISSION	R/C/L	#	MAG	FR PHOTO	PRIN. PT.	ORB #	GET TIMES	GMT HR	M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE	SCALE AT PRIN. PT.	T 1 L T	SUN SIDE.	FWD.	LAP	S. S	
																				HAIR
L 5	1	161	32+69N	22+06W	65	000	0000	122831	8-16-67	LUNAR ORB HI.	610MM B&W	- NONE	158K	259016	9	3+1 17	-	5		
CAM. RAD. = 32.42N 22.12W SWING = 274. PHASE = 73. EMIS. ANG. = 3. CAM. RAD. = 1897.2 KM. SUN AZM = 99.6																				
S. E. PART OF LAC 24 SINUS IRIDUM																				
L 5	2	161	32+70N	22+07W	65	000	0000	122832	8-16-67	LUNAR ORB LO.	F=80MM B&W	- NONE	158K	1975000	7	3+1 17	-	87		
CAM. RAD. = 32.42N 22.11W SWING = 272. PHASE = 73. EMIS. ANG. = 3. CAM. RAD. = 1897.2 KM. SUN AZM = 99.6																				
SOUTHERN PART OF LAC 24 SINUS IRIDUM																				
6 NORTHERN PART OF LAC 40 TIMOCHARIS, LAHBERT																				
L 5	1	162	33+16N	22+01W	65	000	0000	122839	8-16-67	LUNAR ORB HI.	610MM B&W	- NONE	160K	262295	9	3+5 17	-	2		
CAM. RAD. = 32.84N 22.07W SWING = 274. PHASE = 73. EMIS. ANG. = 4. CAM. RAD. = 1899.2 KM. SUN AZM = 99.8																				
S. E. PART OF LAC 24 SINUS IRIDUM																				
L 5	2	162	33+17N	22+02W	65	000	0000	122839	8-16-67	LUNAR ORB LO.	F=80MM B&W	- NONE	160K	2000000	6	3+5 17	-	86		
CAM. RAD. = 32.84N 22.07W SWING = 271. PHASE = 73. EMIS. ANG. = 4. CAM. RAD. = 1899.2 KM. SUN AZM = 99.8																				
SOUTHERN PART OF LAC 24 SINUS IRIDUM																				
6 NORTHERN PART OF LAC 40 TIMOCHARIS, LAHBERT																				

TOTAL PHOTOS IN THIS GROUP = 25



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN; B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREN; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

HIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T I L T	S I D E,
SUN	NULL	OR	LAT.				TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.		A Z	ANG. ANG. FWD.
#	#	MAIN	LONG.				(ESTIMATED)			TYPE		M=N.MI	PT.		FR.	LAP
												K=KM.			VERT	B. P
L 4	1	103	41.81N	11.28E	19	***	001815	5-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2927K	4798341	107	1.7 22 - .77
CAM.NAD.= 42.76N 7.57E SWING= 272. PHASE= 72. EMIS.ANG.= 5. CAM.RAD.= 4666.2 KM. SUN AZM=110.7																
WESTERN PART OF LAC 26 EUDOXUS, BUR; LAC 25 CASSINI, ALP; LAC 13 ARISTOTE.,; LAC 41 APENNINES, HAENUS & LAC 42 M.SERENITY																
L 4	2	108	14.26S	2.36W	20	***	171651	5-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2719K	33987500	76	.5 21 -.12
CAM.NAD.= 14.45S 3.17W SWING= 262. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4458.2 KM. SUN AZM= 83.8																
LAC 77 PTOLMAEUS.; W>1/2 MOON SPHERE; LAC 126 CLAVIUS, M; LAC 25 CASSINI, ALPS MTS & LAC 61 TARUNTIUS, LYE																
L 4	1	110	42.59N	3.35E	20	***	182013	5-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2916K	4780328	94	1.1 21 -.77
CAM.NAD.= 42.77N 0.86E SWING= 259. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4655.2 KM. SUN AZM=109.6																
EASTERN PART OF LAC 25 CASSINI, ALP; LAC 26 EUDOXUS, BUR; LAC 12 PLATO, ALPI; LAC 13 ARISTOTE., M.FRIG & LAC 41 APENNINES																
L 4	2	110S	42.60N	3.35E	20	***	182013	5-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2916K	36450000	94	1.1 21 -.18
CAM.NAD.= 42.77N 0.86E SWING= 259. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4655.2 KM. SUN AZM=109.6																
DEGRADED NEGATIVE; LAC 25 CASSINI, AL; W>1/2 MOON SPHERE; LAC 1 N.POLE NEAR SIDE BYRD, PFARY >80 N & LAC 79 COLOMBO, NE.M.																
L 4	2	113	14.63S	9.51W	21	***	051900	5-19-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2718K	33975000	123	.2 20 -.00
CAM.NAD.= 14.45S 9.81W SWING= 309. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4457.2 KM. SUN AZM= 83.9																
LAC 77 PTOLMAEUS.; W>1/2 MOON SPHERE; LAC 137 NEWTON, MO; LAC 25 CASSINI, ALPS MTS & LAC 42 M.SERENITY, DA																
L 4	1	115	42.27N	2.67W	21	***	062212	5-19-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2905K	4762295	101	1.4 21 -.78
CAM.NAD.= 42.76N 5.70W SWING= 267. PHASE= 73. EMIS.ANG.= 4. CAM.RAD.= 4644.2 KM. SUN AZM=109.5																
LAC 25 CASSINI, AL; LAC 12 PLATO, ALPI; LAC 13 ARISTOTE.,; LAC 40 TIMOCHARIS, LAMBERT & LAC 41 APENNINES, HAE																
L 4	2	115	42.28N	2.67W	21	***	062212	5-19-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2905K	36312500	101	1.4 21 -.21
CAM.NAD.= 42.76N 5.70W SWING= 266. PHASE= 73. EMIS.ANG.= 4. CAM.RAD.= 4644.2 KM. SUN AZM=109.5																
LAC 25 CASSINI, AL; W>1/2 MOON SPHERE; LAC 74 RIPHAEUS M; LAC 1 N.POLE NEAR SIDE BYRD, PFARY >80 N & LAC 16																
L 4	2	120	14.28S	15.64W	22	***	172107	5-19-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2717K	33962500	77	.5 20 -.12
CAM.NAD.= 14.46S 16.43W SWING= 263. PHASE= 71. EMIS.ANG.= 1. CAM.RAD.= 4456.2 KM. SUN AZM= 84.0																
LAC 76 RIPHAEUS M; W>1/2 MOON SPHERE; LAC 126 CLAVIUS, M; LAC 25 CASSINI, ALPS MTS & LAC 42 M.SERENITY, DA																
L 4	1	122	42.07N	9.24W	22	***	182411	5-19-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2895K	4746902	105	1.4 21 -.77
CAM.NAD.= 42.76N 12.27W SWING= 270. PHASE= 73. EMIS.ANG.= 4. CAM.RAD.= 4634.2 KM. SUN AZM=109.1																
WESTERN PART OF LAC 25 CASSINI, ALP; LAC 24 SINUS IRIDU; LAC 12 PLATO, ALPI; LAC 40 TIMOCHARIS, LAMBERT & LAC 41 APENNINES																

MIS MAG		FR. PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE,
SION ROLL	ON	LAT.			THES-HR M SEC			SENSOR	AND FILTER	TUDE PRIN.	AZ ANG.	ANG. FWD.
#	#	HAUT	LONG.		(ESTIMATED)			TYPE		M=N.MI K=KM.	PT. VERT	FR. LAP
L 4	2	122	42.00N	9.24W	22	***	182411	5-19-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2895K 36187500	105 1.4 21 -.27
CAM.NAD.= 42.76N 12.27W SWING= 270. PHASE= 73. EMIS.ANG.= 4. CAM.RAD.= 4634.2 KM. SUN AZM=109.1												
LAC 25 CASSINI,AL ; >1/2 MOON SPHERE ; LAC 76 HIPHAELUS M ; LAC 1 N.POLE NEAR SIDE BYRD,PEARY >80 N 6 LAC 14 ENDYMION,STRA												
L 4	1	127	41.20N	14.29W	23	***	062610	5-20-67 LUNAR ORB HI. 610MM B&W	-	NONE	2886K 4731148	114 2.2 22 -.77
CAM.NAD.= 42.80N 18.79W SWING= 278. PHASE= 74. EMIS.ANG.= 6. CAM.RAD.= 4625.2 KM. SUN AZM=109.6												
EASTERN PART OF LAC 24 SINUS IRID ; WESTERN PART OF LAC 25 CASSINI,AL ; LAC 12 PLATO,ALPINE VAL. & LAC 40 TIMOCHARIS,LA												
L 4	2	132	9.14S	29.59W	24	***	172507	5-20-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2717K 33962500	1 3.4 19 -.00
CAM.NAD.= 14.42S 29.69W SWING= 188. PHASE= 72. EMIS.ANG.= 9. CAM.RAD.= 4456.2 KM. SUN AZM= 86.2												
LAC 76 HIPHAELUS H ; >1/2 MOON SPHERE ; LAC 125 SCHILLER, ; LAC 39 ARISTARCHUS & LAC 25 CASSINI,ALPS												
L 4	1	134	46.31N	18.14W	24	***	182759	5-20-67 LUNAR ORB HI. 610MM B&W	-	NONE	2878K 4718033	53 3.7 21 -.26
CAM.NAD.= 42.80N 25.30W SWING= 218. PHASE= 74. EMIS.ANG.= 10. CAM.RAD.= 4617.2 KM. SUN AZM=113.2												
EASTERN PART OF LAC 24 SINUS IRIDU ; LAC 25 CASSINI,ALP ; LAC 12 PLATO,ALPI ; LAC 40 TIMOCHARIS,LAMBERT & LAC 3 PHILOLAUS.												
L 4	2	149	15.05S	48.76W	27	***	052940	5-22-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2720K 34000000	127 .7 18 -.8A
CAM.NAD.= 14.40S 49.64W SWING= 313. PHASE= 74. EMIS.ANG.= 2. CAM.RAD.= 4459.2 KM. SUN AZM= 89.4												
LAC 75 LEIKORNE,F ; >1/2 MOON SPHERE ; LAC 136 BAILLEY,K ; LAC 38 SELEUCUS,SCHROTER V. & LAC 25 CASSINI,ALPS												
L 4	2	157	13.36N	56.27W	28	***	180116	5-22-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2669K 33362500	255 1.4 17 -.58
CAM.NAD.= 13.91N 54.17W SWING= 69. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 4408.2 KM. SUN AZM= 93.4												
LAC 56 HEVELIUS,R ; >1/2 MOON SPHERE ; LAC 92 BYRGIUS,DA ; LAC 10 BABBAGE,N.PROCELARN. & LAC 25 CASSINI,ALPS												
L 4	2	162	13.23N	62.18W	29	***	060208	5-23-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2670K 33375000	243 1.0 17 -.78
CAM.NAD.= 13.93N 60.75W SWING= 57. PHASE= 71. EMIS.ANG.= 3. CAM.RAD.= 4409.2 KM. SUN AZM= 93.4												
LAC 56 HEVELIUS,R ; >1/2 MOON SPHERE ; LAC 109 PIAZZI,V. ; LAC 21 N.GERARD,BOOLE & LAC 25 CASSINI,ALPS												
L 5	1	102	48.22N	1.08E	49	***	093823	8-14-67 LUNAR ORB HI. 610MM B&W	-	NONE	250K 409836	240 34.0 12 -.00
CAM.NAD.= 51.24N 8.67E SWING= 178. PHASE= 54. EMIS.ANG.= 40. CAM.RAD.= 1989.2 KM. SUN AZM=101.8												
S. E. PART OF LAC 12 PLATO,ALPINE VAL. & NORTHERN PART OF LAC 25 CASSINI,ALPS MTS												
L 5	2	102	48.21N	1.04E	49	***	093823	8-14-67 LUNAR ORB LO.F=80MM B&W	-	NONE	250K 3125000	240 34.1 12 -.00
CAM.NAD.= 51.30N 8.67E SWING= 178. PHASE= 54. EMIS.ANG.= 40. CAM.RAD.= 1989.2 KM. SUN AZM=101.8												
SOUTHERN PART OF LAC 12 PLATO,ALPINE VAL. ; NORTHERN PART OF LAC 25 CASSINI,AL & N. E. PART OF LAC 24 SINUS IRIDUM												
L 5	2	129	48.69N	2.92W	56	***	075437	8-15-67 LUNAR ORB LO.F=80MM B&W	-	NONE	233K 2912500	65 6.9 17 -.00
CAM.NAD.= 48.30N 4.19W SWING= 328. PHASE= 79. EMIS.ANG.= 8. CAM.RAD.= 1972.2 KM. SUN AZM=107.7												
SOUTHERN PART OF LAC 12 PLATO,ALPINE VAL. & NORTHERN PART OF LAC 25 CASSINI,ALPS MTS												
L 5	2	130	49.33N	2.76W	56	***	075449	8-15-67 LUNAR ORB LO.F=80MM B&W	-	NONE	236K 2950000	61 7.2 17 -.87
CAM.NAD.= 48.86N 4.09W SWING= 324. PHASE= 79. EMIS.ANG.= 8. CAM.RAD.= 1975.2 KM. SUN AZM=108.0												
SOUTHERN PART OF LAC 12 PLATO,ALPINE VAL. & NORTHERN PART OF LAC 25 CASSINI,ALPS MTS												
L 5	2	131	49.98N	2.60W	56	***	075500	8-15-67 LUNAR ORB LO.F=80MM B&W	-	NONE	239K 2987500	57 7.5 17 -.87
CAM.NAD.= 49.43N 3.98W SWING= 320. PHASE= 79. EMIS.ANG.= 9. CAM.RAD.= 1978.2 KM. SUN AZM=108.3												
SOUTHERN PART OF LAC 12 PLATO,ALPINE VAL. & NORTHERN PART OF LAC 25 CASSINI,ALPS MTS												

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB N	GET TIMES-HR (I=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	TILT AZ ANG. FR. VERT	SUN SIDE. ANG. FWD. LAP R. 8
L 5	2	132	50.04N 2.43W	56	075512	8-15-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	243K 30375ND	54	7.9 17 -0.87
CAN. NAD. = 50.00N 3.87W SWING = 317. PHASE = 79. EMISS. ANG. = 9. CAM. RAD. = 1982.2 KM. SUN AZH = 108.7 SOUTHERN PART OF LAC 12 PLATO, ALPINE VAL. 6 NORTHERN PART OF LAC 25 CASSINI, ALPS MTS													

TOTAL PHOTOS IN THIS GROUP = 22

TOP OF THE  
AT, PLATE IN POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, s = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B = BRACKET MOUNTED; G = CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR=PHOTO	PRIN.FT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDE	
SUN ROLL	OR	LAT.	#	TIMES-HR	M SEC			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	FWD.
#	#	MAIN	LONG.	(ESTIMATED)				TYPE		M=N.MI	PT.	FR.	LAP	
										K=KM.		VERT	%	
L 4 1	79	41-03N	39-05E	15	000	061131	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2964K	4859016	103	2.1 25 - .90
CAM.NAD.= 42.79N 34.33E SWING= 268. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4703.2 KM. SUN AZM=113.3														
LAC 27 GEMINUS,AT ; LAC 26 EUDOXUS,BU ; LAC 13 ARISTOTE., ; LAC 14 ENDYMION,STRABO & LAC 42 M.SERENITY,DA														
L 4 1	86	41-02N	31-25E	16	000	181300	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2956K	4845902	122	1.9 24 - .66
CAM.NAD.= 42.86N 27.61E SWING= 286. PHASE= 71. EMIS.ANG.= 5. CAM.RAD.= 4695.2 KM. SUN AZM=111.7														
LAC 26 EUDOXUS,BU ; LAC 27 GEMINUS,AT ; LAC 13 ARISTOTE., ; LAC 14 ENDYMION,STRABO & LAC 42 M.SERENITY,DA														
L 4 2	86	41-02N	31-24E	16	000	181300	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2956K	36950000	122	1.9 24 - .90
CAM.NAD.= 42.86N 27.61E SWING= 286. PHASE= 71. EMIS.ANG.= 5. CAM.RAD.= 4695.2 KM. SUN AZM=111.7														
LAC 26 EUDOXUS,BU ; W>1/2 MOON SPHERE ; LAC 16 ; LAC 5 PETERMANN, HAYN & LAC 44 CLEOMEDES,M.C														
L 4 2	90	13-75N	15-87E	17	000	054135	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2711K	33887500	267	1.6 22 - .71
CAM.NAD.= 13.89N 18.39E SWING= 82. PHASE= 64. EMIS.ANG.= 4. CAM.RAD.= 4450.2 KM. SUN AZM= 95.0														
LAC 60 J.CAESAR,SABINE,JANSEN ; W>1/2 MOON SPHERE ; LAC 26 EUDOXUS,BU ; LAC 95 PURBACH,ARZACHEL & LAC 97 FRACASTORI														
L 4 1	91	42-03N	25-73E	17	000	061439	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2947K	4831148	100	2.1 24 - .36
CAM.NAD.= 42.80N 20.90E SWING= 265. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4686.2 KM. SUN AZM=112.5														
EASTERN PART OF LAC 26 EUDOXUS,BUR ; LAC 27 GEMINUS,ATL ; LAC 13 ARISTOTE., ; LAC 14 ENDYMION,STRABO & LAC 42 M.SERENIT														
L 4 2	91	42-03N	25-72E	17	000	061439	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2947K	36837500	100	2.1 24 - .00
CAM.NAD.= 42.80N 20.90E SWING= 265. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4686.2 KM. SUN AZM=112.5														
LAC 26 EUDOXUS,BURG ; W>1/2 MOON SPHERE ; LAC 1 N.POLE NEARSIDE BYRD,PEARL & LAC 16														
L 4 2	96	15-17S	10-66E	18	000	171241	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2722K	34025000	138	.6 22 - .87
CAM.NAD.= 14.45S 9.99E SWING= 324. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 4461.2 KM. SUN AZM= 83.2														
LAC 78 THEOPHILUS ; W>1/2 MOON SPHERE ; LAC 41 APENNINES, ; LAC 26 EUDOXUS,BURG & LAC 126 CLAVIUS,MAGI														
L 4 1	98	40-97N	18-53E	18	000	181625	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2938K	4816393	118	2.2 23 - .76
CAM.NAD.= 42.81N 14.21E SWING= 282. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4677.2 KM. SUN AZM=111.3														
LAC 26 EUDOXUS,BU ; CENTRAL PART OF LAC 13 ARISTOTE., ; WESTERN PART OF LAC 42 M.SERENITY,DAVES & LAC 41 APENNINES,HAZ														
L 4 2	98	40-97N	18-53E	18	000	181626	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2938K	36725000	118	2.2 23 - .27
CAM.NAD.= 42.81N 14.21E SWING= 282. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4677.2 KM. SUN AZM=111.3														
LAC 26 EUDOXUS,BU ; W>1/2 MOON SPHERE ; LAC 44 CLEOMEDES, ; LAC 78 THEOPHILUS,KANT & LAC 1 N.POLE NEARSID														

MIS SION	MAG ROLL	FR, ON	PHOTO LAT.	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES-HR	GMI M	M-DA-YR SEC	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE	SCALE PRIN.	AZ	T I ANG.	L T ANG.	SUN FR.	SIDE, LAP
#	#	#	#	#	#	#	(I=ESTIMATED)					M=N.MI K=KM.	PT.					
L 4	1	103	41.81N	11.28E	19	***	061815	5-18-67	LUNAR ORB HI.	610MM B&W	-	NONE	2927K	4798361	107	1.7	22	-.77
CAM.NAD.= 42.76N 7.57E SWING= 272. PHASE= 72. EMIS.ANG.= 5. CAM.RAD.= 4666.2 KM. SUN AZH=110.7																		
WESTERN PART OF LAC 26 EUDOXUS, BURG ; LAC 25 CASSINI, ALP ; LAC 13 ARISTOTE., ; LAC 91 APENNINES, HAEMUS 6 LAC 42 M. SERENIT																		
L 4	2	103	41.82N	11.28E	19	***	061816	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2927K	36587500	107	1.7	22	-.00	
CAM.NAD.= 42.76N 7.57E SWING= 272. PHASE= 72. EMIS.ANG.= 5. CAM.RAD.= 4666.2 KM. SUN AZH=110.7																		
LAC 26 EUDOXUS, BURG ; >1/2 MOON SPHERE ; LAC 1 N. POLE NEAR SIDE BYRD, PEARL LAC 6																		
L 4	1	110	42.59N	3.35E	20	***	182013	5-18-67	LUNAR ORB HI.	610MM B&W	-	NONE	2916K	4780328	94	1.1	21	-.72
CAM.NAD.= 42.77N 0.86E SWING= 259. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4655.2 KM. SUN AZH=109.6																		
EASTERN PART OF LAC 25 CASSINI, ALP ; LAC 26 EUDOXUS, BURG ; LAC 12 PLATO, ALPI ; LAC 13 ARISTOTE., N. FRIG 6 LAC 41 APENNINES																		
L 4	2	114	13.47N	10.97W	21	***	054938	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2687K	33587500	261	1.8	19	-.64	
CAM.NAD.= 13.89N 8.09W SWING= 77. PHASE= 66. EMIS.ANG.= 5. CAM.RAD.= 4426.2 KM. SUN AZH= 94.2																		
LAC 58 CUPERNICUS, REINHOLD ; >1/2 MOON SPHERE ; LAC 111 WILHELM, E ; LAC 12 PLATO, ALP ; LAC 26 EUDOX 6 LAC 96 ALTAI																		
L 4	1	115	42.27N	2.67W	21	***	062212	5-19-67	LUNAR ORB HI.	610MM B&W	-	NONE	2905K	4762295	101	1.4	21	-.78
CAM.NAD.= 42.76N 5.70W SWING= 267. PHASE= 73. EMIS.ANG.= 4. CAM.RAD.= 4644.2 KM. SUN AZH=109.5																		
LAC 25 CASSINI, AL ; LAC 12 PLATO, ALPI ; LAC 13 ARISTOTE., ; LAC 40 TIMOCHARIS, LAMBERT 6 LAC 41 APENNINES, HAE																		
L 4	2	125	14.89S	22.97W	23	***	052314	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2717K	33962500	170	.3	19	-.90	
CAM.NAD.= 14.40S 23.06W SWING= 356. PHASE= 71. EMIS.ANG.= 1. CAM.RAD.= 4456.2 KM. SUN AZH= 84.2																		
LAC 76 HIPHAESUS M ; >1/2 MOON SPHERE ; LAC 128 BIELA, NAT ; LAC 23 RUMKER, SHARP 6 LAC 26 EUDOXUS, BURG																		
L 4	2	126	12.87N	23.05W	23	***	055348	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2677K	33462500	238	1.3	20	-.00	
CAM.NAD.= 13.94N 21.27W SWING= 53. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4416.2 KM. SUN AZH= 94.0																		
LAC 58 CUPERNICUS, REINHOLD ; >1/2 MOON SPHERE ; LAC 111 WILHELM, ELGER, HEE 6 LAC 10 BARRAGE, N. PH																		
L 4	2	138	13.71N	36.45W	25	***	055724	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2671K	33387500	263	1.3	18	-.61	
CAM.NAD.= 13.92N 34.43W SWING= 78. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4410.2 KM. SUN AZH= 94.0																		
LAC 57 KEPLER, ENC ; >1/2 MOON SPHERE ; LAC 110 SCHICKARD ; LAC 11 J. HENSCHER, JURAS, ROUGIER 6 LAC 26 EUDOXUS, BURG																		
L 4	2	144	14.04N	41.77W	26	***	175854	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2669K	33362500	280	.5	19	-.78	
CAM.NAD.= 13.90N 41.01W SWING= 94. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4408.2 KM. SUN AZH= 94.3																		
LAC 57 KEPLER, ENC ; >1/2 MOON SPHERE ; LAC 92 BYRGIUS, DA ; LAC 10 BARRAGE, N. PROCELARH. 6 LAC 26 EUDOXUS, BURG																		
L 4	2	152	69.78N	29.61W	27	***	071044	5-22-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3345K	41812500	142	1.5	13	-.90	
CAM.NAD.= 72.23N 34.79W SWING= 321. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5084.2 KM. SUN AZH=126.4																		
LAC 3 PHILOLAUS, U ; >1/2 MOON SPHERE ; LAC 39 ARISTARCHU ; LAC 6 6 LAC 15 M. HUMBOLDTIANU																		
L 4	2	1913	38.29N	53.79E	33	***	094706	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	5503K	68787499	288	7.0	16	-.00	
CAM.NAD.= 33.95N 86.05E SWING= 282. PHASE= 107. EMIS.ANG.= 34. CAM.RAD.= 7242.2 KM. SUN AZH=257.6																		
DEGRADED NEGATIVE ; LAC 27 GEMINUS, AT ; >1/2 MOON SPHERE ; LAC 98 PETAVIUS, HOLDEN 6 LAC 26 EUDOXUS, BURG																		
L 4	2	1925	38.22N	53.84E	33	***	094709	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	5504K	68799999	288	7.7	16	-.90	
CAM.NAD.= 33.93N 86.05E SWING= 282. PHASE= 107. EMIS.ANG.= 34. CAM.RAD.= 7243.2 KM. SUN AZH=257.7																		
DEGRADED NEGATIVE ; LAC 27 GEMINUS, AT ; >1/2 MOON SPHERE ; LAC 80 LANGRENUS, H. FERT. 6 LAC 26 EUDOXUS, BURG																		

MIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE,			
SUN ROLL	OR	OR	LAT.	#	TIMES-HH	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
#	#	MAIN	LUNG.		(ESTIMATED)			TYPE		M=N, MI	PT.		FR,	VERT	LAP
										K=KM.					#, %
L 5	1	86	38-02N	13-46E	45	000	204942	8-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	178K	291803	4	3.1 19	-.00
		CAM-NAD.=	37-70N	13-43E			SWING= 268.	PHASE= 71.	EMIS-ANG.= 3.	CAM-RAD.=	1917.2 KM.		SUN	AZM=103.3	
							S. W. PART OF	LAC 26 EUDOXUS, BURG							
L 5	2	86	38-03N	13-44E	45	000	204942	8-13-67 LUNAR ORB LO.F=80MM B&W	-	NONE	178K	2225000	1	3.2 19	-.00
		CAM-NAD.=	37-70N	13-43E			SWING= 266.	PHASE= 71.	EMIS-ANG.= 3.	CAM-RAD.=	1917.2 KM.		SUN	AZM=103.3	
							S. W. PART OF	LAC 26 EUDOXUS, BURG							
L 5	1	87	38-51N	13-52E	45	000	204951	8-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	180K	2950002	4	3.6 19	-.7
		CAM-NAD.=	38-14N	13-49E			SWING= 269.	PHASE= 71.	EMIS-ANG.= 4.	CAM-RAD.=	1919.2 KM.		SUN	AZM=103.5	
							S. W. PART OF	LAC 26 EUDOXUS, BURG							
L 5	2	87	38-52N	13-51E	45	000	204951	8-13-67 LUNAR ORB LO.F=80MM B&W	-	NONE	180K	2250000	2	3.6 19	-.87
		CAM-NAD.=	38-15N	13-49E			SWING= 266.	PHASE= 71.	EMIS-ANG.= 4.	CAM-RAD.=	1919.2 KM.		SUN	AZM=103.5	
							S. W. PART OF	LAC 26 EUDOXUS, BURG							
L 5	1	88	39-01N	13-59E	45	000	204959	8-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	182K	298361	4	4.0 19	-.7
		CAM-NAD.=	38-59N	13-55E			SWING= 269.	PHASE= 71.	EMIS-ANG.= 4.	CAM-RAD.=	1921.2 KM.		SUN	AZM=103.7	
							S. W. PART OF	LAC 26 EUDOXUS, BURG							
L 5	2	88	39-02N	13-57E	45	000	204959	8-13-67 LUNAR ORB LO.F=80MM B&W	-	NONE	182K	2275000	2	4.1 19	-.87
		CAM-NAD.=	38-59N	13-55E			SWING= 267.	PHASE= 71.	EMIS-ANG.= 4.	CAM-RAD.=	1921.2 KM.		SUN	AZM=103.7	
							WESTERN PART OF	LAC 26 EUDOXUS, BURG							
L 5	1	89	39-51N	13-66E	45	000	205008	8-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	184K	301639	4	4.5 19	-.7
		CAM-NAD.=	39-04N	13-60E			SWING= 269.	PHASE= 71.	EMIS-ANG.= 5.	CAM-RAD.=	1923.2 KM.		SUN	AZM=103.9	
							WESTERN PART OF	LAC 26 EUDOXUS, BURG							
L 5	2	89	39-52N	13-64E	45	000	205008	8-13-67 LUNAR ORB LO.F=80MM B&W	-	NONE	184K	2300000	3	4.5 18	-.87
		CAM-NAD.=	39-04N	13-61E			SWING= 267.	PHASE= 71.	EMIS-ANG.= 5.	CAM-RAD.=	1923.2 KM.		SUN	AZM=103.9	
							WESTERN PART OF	LAC 26 EUDOXUS, BURG							

TOTAL PHOTOS IN THIS GROUP = 29

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, \$ = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (0), (1), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G=CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NO. 0.0

MIS SION	MAG	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR (ESTIMATED)	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE M-N-MI K-KM.	SCALE AT PRIN. PT.	T I L T AZ ANG.	SUN SIDE ANG. FR. VERT	PHO. LAP S. S
L 4	2	60° 13.58S	48.79E	12	***	170326	5-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	2738K 34225000	319	7 23	-.90	
CAM.HAD.= 14.43S 49.54E SWING= 145. PHASE= 66. EMIS.ANG.= 2. CAM.RAD.= 4477.2 KM. SUN AZM= 83.6 LAC 79 COLUMBO, NE; W>1/2 MOON SPHERE; LAC 27 GEMINUS, AT; LAC 44 CLEOMEDES, M. CHRIS. & LAC 114 RHEITA, JANSS														
L 4	1	62 42.37N	59.16E	12	***	180759	5-14-67	LUNAR ORB HI. 610MM B&W	- NONE	2979K 4883607	95	2.0 25	-.00	
CAM.HAD.= 42.81N 54.52E SWING= 260. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 4718.2 KM. SUN AZM=115.0 LAC 28 GAUSS, MESS; LAC 27 GEMINUS, AT; LAC 14 ENDYMION, S; LAC 15 M. HUMBOLDTIANUM & LAC 44 CLEOMEDES, M. C														
L 4	1	67 41.00N	51.64E	13	***	080901	5-15-67	LUNAR ORB HI. 610MM B&W	- NONE	2976K 4878689	108	1.8 25	-.90	
CAM.HAD.= 42.81N 47.79E SWING= 272. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 4715.2 KM. SUN AZM=113.6 EASTERN PART OF LAC 27 GEMINUS, AT; LAC 28 GAUSS, MESSA; LAC 14 ENDYMION, S; LAC 43 MACROBIUS, PROCLUS & LAC 44 CLEOMEDES														
L 4	2	67 41.81N	51.64E	13	***	060901	5-15-67	LUNAR ORB LO.F=80MM B&W	- NONE	2976K 37200000	108	1.8 25	-.00	
CAM.HAD.= 42.81N 47.79E SWING= 272. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 4715.2 KM. SUN AZM=113.6 DEGRADED NEGATIVE & LAC 27 GEMINUS, ATLAS														
L 4	1	74 40.70N	45.57E	14	***	181008	5-15-67	LUNAR ORB HI. 610MM B&W	- NONE	2970K 4868852	119	2.3 25	-.68	
CAM.HAD.= 42.75N 41.06E SWING= 283. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4709.2 KM. SUN AZM=113.2 CENTRAL PART OF LAC 27 GEMINUS, ATLAS; NORTHERN PART OF LAC 43 MACROBIUS, & CENTRAL PART OF LAC 14 ENDYMION, STR														
L 4	2	74 40.70N	45.57E	14	***	181008	5-15-67	LUNAR ORB LO.F=80MM B&W	- NONE	2970K 37125000	119	2.3 25	-.00	
CAM.HAD.= 42.75N 41.06E SWING= 283. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4709.2 KM. SUN AZM=113.2 DEGRADED NEGATIVE; LAC 27 GEMINUS, AT; W>1/2 MOON SPHERE; LAC 146 N. POLE FAR SIDE; N. ANSEN, N3 > 80N & LAC 114 RHEITA, JANSS														
L 4	1	79 41.83N	39.05E	15	***	061131	5-16-67	LUNAR ORB HI. 610MM B&W	- NONE	2964K 4859016	103	2.1 25	-.90	
CAM.HAD.= 42.79N 34.33E SWING= 268. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4703.2 KM. SUN AZM=113.3 LAC 27 GEMINUS, AT; LAC 26 EUDOXUS, BU; LAC 13 ARISTOTE., I; LAC 14 ENDYMION, STRABO & LAC 42 M. SERENITY, DA														
L 4	2	79 41.83N	39.05E	15	***	061131	5-16-67	LUNAR ORB LO.F=80MM B&W	- NONE	2964K 37050000	103	2.1 25	-.90	
CAM.HAD.= 42.79N 34.33E SWING= 268. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4703.2 KM. SUN AZM=113.3 LAC 27 GEMINUS, ATLAS; W>1/2 MOON SPHERE; LAC 1 N. POLE NEAR SIDE BY; LAC 13 ARISTOTE., M. FRIG & LAC 78 THEOPHILUS														
L 4	1	86 41.62N	31.25E	16	***	181300	5-16-67	LUNAR ORB HI. 610MM B&W	- NONE	2956K 4845902	122	1.9 24	-.66	
CAM.HAD.= 42.80N 27.61E SWING= 286. PHASE= 71. EMIS.ANG.= 5. CAM.RAD.= 4695.2 KM. SUN AZM=111.7 LAC 26 EUDOXUS, BU; LAC 27 GEMINUS, AT; LAC 13 ARISTOTE., I; LAC 14 ENDYMION, STRABO & LAC 42 M. SERENITY, DA														

L	4	1	91	42.03N	25.73E	17	***	****	061439	5-17-67	LUNAR ORB HI.	610MM B&W	-	NONE	2947K	4831148	100	2.1	24	-.36
CAM. RAD. = 4486.2 KM. SUN AZM = 112.5																				
EASTERN PART OF LAC 46 EUDOXUS, BUR I LAC 27 GEMINUS, ATL I LAC 13 ARISTOTE.. I LAC 14 ENDYMION, STRABO 6 LAC 42 M. SERENIT																				
L	4	2	121	13.81N	16.80W	22	***	****	175143	5-19-67	LUNAR ORB LO, F=80MM B&W	-	NONE	2482K	33525000	268	1.3	20	-.66	
CAM. RAD. = 4421.2 KM. SUN AZM = 94.4																				
LAC 58 COPERNICUS, REINHOLD I W>1/2 MOON SPHERE I LAC 111 WILHELM, E I LAC 96 ALTAI SCA I LAC 11 J. HER & LAC 27 GEMIN																				
L	4	2	190	70.34N	63.47W	33	***	****	071554	5-25-67	LUNAR ORB LO, F=80MM B&W	-	NONE	3373K	42162500	125	1.9	14	-.00	
CAM. RAD. = 5112.2 KM. SUN AZM = 129.2																				
LAC 2 ANAXIMENES, I W>1/2 MOON SPHERE I LAC 54 BELB LADE I LAC 15 M. HUMBOLDTIANUM 6 LAC 27 GEMINUS, ATLAS																				
L	4	1	191	38.30N	53.79E	33	***	****	094706	5-25-67	LUNAR ORB HI, 610MM B&W	-	NONE	5503K	9021311	288	7.7	16	-.00	
CAM. RAD. = 7242.2 KM. SUN AZM = 257.6																				
LAC 27 GEMINUS, AT I W1/4 MOONS SPHERE I LAC 4 METON, DESIT I LAC 5 PETERMANN, HAYN 6 LAC 61 TARUNTIUS, LYE																				
L	4	2	191	38.29N	53.79E	33	***	****	094706	5-25-67	LUNAR ORB LO, F=80MM B&W	-	NONE	5503K	68787499	288	7.0	16	-.00	
CAM. RAD. = 7242.2 KM. SUN AZM = 257.6																				
DEGRADED NEGATIVE I LAC 27 GEMINUS, AT I W>1/2 MOON SPHERE I LAC 98 PETAVIUS, HOLDEN 6 LAC 26 EUDOXUS, BURG																				
L	4	1	192	38.22N	53.84E	33	***	****	094709	5-25-67	LUNAR ORB HI, 610MM B&W	-	NONE	5504K	9022951	288	7.7	16	-.90	
CAM. RAD. = 7243.2 KM. SUN AZM = 257.7																				
LAC 27 GEMINUS, AT I W1/4 MOONS SPHERE I LAC 4 METON, DESIT I LAC 5 PETERMANN, HAYN 6 LAC 61 TARUNTIUS, LYE																				
L	4	2	192	38.22N	53.84E	33	***	****	094709	5-25-67	LUNAR ORB LO, F=80MM B&W	-	NONE	5504K	68799999	288	7.7	16	-.90	
CAM. RAD. = 7243.2 KM. SUN AZM = 257.7																				
DEGRADED NEGATIVE I LAC 27 GEMINUS, AT I W>1/2 MOON SPHERE I LAC 80 LANGRENUS, M. FERT. 6 LAC 26 EUDOXUS, BURG																				

TOTAL PHOTOS IN THIS GROUP = 16

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR ( ) = NO INFO \* = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER X AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR M SEC (*ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE M=N.MI K=KM.	SCALE PRIN. PT.	AT AZ	TILT ANG. FR.	SUN SIDE ANG. LAP
L 4	2	116	70.83N 4.49E	21	***	070041	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3397K	42462500	148	0.6 12 -.
CAM.NAD.= 71.88N 2.48E S= 326. PHASE= 80. EMIS.ANG.= 2. CAM.RAD.= 5136.2 KM. SUN AZM=124.1														
LAC 3 PHILOLAUS.B : LAC 7 KARPINSK LAC 41 APENNINES, 1 LAC 1 N.POLE NEARSIDE BYRD, PEARY >80 N & LAC 17														
L 4	1	413	41.26N 80.11E	9	***	060535	5-13-67	LUNAR ORB HI. 610MM B&W	-	NONE	2984K	4891803	109	2.5 28 -.
CAM.NAD.= 42.85N 74.64E SWING= 273. PHASE= 69. EMIS.ANG.= 7. CAM.RAD.= 4723.2 KM. SUN AZM=116.7														
DEGRADED NEGATIVE : LAC 28 GAUSS, MESSALA, ZENO : LAC 29 BRUNO FABRY & EASTERN PART OF LAC 15 M.HUMBOLDTIANUM														
L 4	2	413	41.26N 80.11E	9	***	060535	5-13-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2984K	37300000	109	2.5 28 -.
CAM.NAD.= 42.85N 74.64E SWING= 272. PHASE= 69. EMIS.ANG.= 7. CAM.RAD.= 4723.2 KM. SUN AZM=116.7														
DEGRADED NEGATIVE & LAC 28 GAUSS, MESSALA, ZENO														
L 4	1	480	41.21N 71.77E	10	***	180618	5-13-67	LUNAR ORB HI. 610MM B&W	-	NONE	2983K	4890164	118	1.9 26 -.
CAM.NAD.= 42.84N 67.95E SWING= 282. PHASE= 69. EMIS.ANG.= 5. CAM.RAD.= 4722.2 KM. SUN AZM=114.8														
LAC 28 GAUSS, MESS : LAC 15 M.HUMBOLDT : LAC 44 CLEOMEDES, : LAC 45 PLUTARCH, MAHN & LAC 29 BRUNO FABRY														
L 4	2	483	41.21N 71.77E	10	***	180618	5-13-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2983K	37287500	118	1.9 26 -.
CAM.NAD.= 42.84N 67.95E SWING= 282. PHASE= 69. EMIS.ANG.= 5. CAM.RAD.= 4722.2 KM. SUN AZM=114.8														
DEGRADED NEGATIVE & LAC 28 GAUSS, MESSALA, ZENO														
L 4	1	55	42.07N 65.57E	11	***	060707	5-14-67	LUNAR ORB HI. 610MM B&W	-	NONE	2982K	4888525	102	1.9 26 -.
CAM.NAD.= 42.84N 61.25E SWING= 266. PHASE= 69. EMIS.ANG.= 5. CAM.RAD.= 4721.2 KM. SUN AZM=115.1														
LAC 28 GAUSS, MESS : NORTHERN PART OF LAC 44 CLEOMEDES, : N. E. PART OF LAC 14 ENDYMION, STRARN & LAC 15 M.HUMBOLDTIANUM														
L 4	2	553	42.08N 65.57E	11	***	060707	5-14-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2982K	37275000	101	1.9 26 -.
CAM.NAD.= 42.84N 61.25E SWING= 266. PHASE= 69. EMIS.ANG.= 5. CAM.RAD.= 4721.2 KM. SUN AZM=115.1														
DEGRADED NEGATIVE & LAC 28 GAUSS, MESSALA, ZENO														
L 4	1	62	42.37N 59.16E	12	***	180759	5-14-67	LUNAR ORB HI. 610MM B&W	-	NONE	2979K	4883607	95	2.0 25 -.
CAM.NAD.= 42.81N 54.52E SWING= 260. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 4718.2 KM. SUN AZM=115.0														
LAC 28 GAUSS, MESS : LAC 27 GEMINUS, AT : LAC 14 ENDYMION, S : LAC 15 M.HUMBOLDTIANUM & LAC 44 CLEOMEDES, M.C														
L 4	2	623	42.38N 59.16E	12	***	180759	5-14-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2979K	37237500	95	2.0 25 -.
CAM.NAD.= 42.81N 54.52E SWING= 260. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 4718.2 KM. SUN AZM=115.0														
DEGRADED NEGATIVE & LAC 28 GAUSS, MESSALA, ZENO														

MIS MAG		FR. PHOTO		PRIN. PT. ORB		GET GMT		M-DA-YR		CAMERA-LENS OR		FILM-EXPOSURE		ALTI SCALE AT		T : L T		SUN SIDE	
SION HOLL		OR		LAT.		#		TIMES-HR M SEC		SENSOR		AND FILTER		TUDE PRIN.		AZ ANG. ANG.		FWD.	
#		#		MAIN		#		(ESTIMATED)		TYPE				M=N.MI PT.		FR.		LAP	
														K=KM.		VERT		8. R	
L 4	1	67	41.80N	51.64E	13	***	****	060901	5-15-67	LUNAR ORB HI.	610MM B&W	-	NONE	2976K	4878689	108	1.8	25	-90
		CAM. RAD. = 42.81N		47.79E		SWING = 272.		PHASE = 70.		EMIS. ANG. = 5.		CAM. RAD. = 4715.2 KM.				SUN AZM = 113.6			
		EASTERN PART OF		LAC 27 GEMINUS, ATL		LAC 28 GAUSS, MESSA		LAC 19 ENDYMION, S		LAC 43 MACRORIUS, PROCLUS				6 LAC 44 CLEOMEDES					
L 4	1	165	38.84N	81.13E	29	***	****	094351	5-23-67	LUNAR ORB HI.	610MM B&W	-	NONE	5487K	8995082	290	7.6	14	-90
		CAM. RAD. = 33.96N		112.70E		SWING = 282.		PHASE = 109.		EMIS. ANG. = 33.		CAM. RAD. = 7226.2 KM.				SUN AZM = 259.4			
		LAC 28 GAUSS, MESS		1/4 MOONS SPHERE		LAC 14 ENDYMION, S		LAC 15 H. HUMBOLDTIANUM						6 LAC 63 NEPHEUS, SCHUBER					
L 4	2	165	38.83N	81.13E	29	***	****	094351	5-23-67	LUNAR ORB LO.	F=80MM B&W	-	NONE	5487K	68587499	290	7.6	14	-90
		CAM. RAD. = 33.96N		112.70E		SWING = 282.		PHASE = 109.		EMIS. ANG. = 33.		CAM. RAD. = 7226.2 KM.				SUN AZM = 259.4			
		LAC 28 GAUSS, MESS		1/4 MOONS SPHERE		LAC 18 PETAVIUS, H		LAC 4 METON, DESITTER						6 LAC 1 N. POLE NEARSID					
L 4	1	177	38.81N	67.86E	31	***	****	094528	5-24-67	LUNAR ORB HI.	610MM B&W	-	NONE	5492K	9003279	290	7.6	15	-90
		CAM. RAD. = 33.96N		99.33E		SWING = 282.		PHASE = 108.		EMIS. ANG. = 33.		CAM. RAD. = 7231.2 KM.				SUN AZM = 258.7			
		LAC 28 GAUSS, MESS		1/4 MOONS SPHERE		LAC 3 PHILOLAUS, B		LAC 4 METON, DESITTER						6 LAC 44 CLEOMEDES, M.C					
L 4	2	177	38.81N	67.86E	31	***	****	094529	5-24-67	LUNAR ORB LO.	F=80MM B&W	-	NONE	5492K	68649999	290	7.6	15	-90
		CAM. RAD. = 33.96N		99.33E		SWING = 282.		PHASE = 108.		EMIS. ANG. = 33.		CAM. RAD. = 7231.2 KM.				SUN AZM = 258.7			
		LAC 28 GAUSS, MESSALA, ZENO		1/2 MOON SPHERE		LAC 61 TARUNTIUS, LYELL		LAC 99 HUMBOLDT, GIBBS						6 LAC 5 PETERMANN,					

TOTAL PHOTOS IN THIS GROUP = 14

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, \* = ALMOST UNUSABLE PHOTOS,  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-),(+),I), OR(O) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW-A. = SUPER WIDE ANGLE LENS; EKTAR=EKTA 2.8 LENS;  
HSB=HASSELBLAD; MAUK=MAUWER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB "	GET TIMES-HR (ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N, MI K=KM.	SCALE AT PRIN. PT.	1 AZ	2 ANG.	3 ANG.	SUN SIDE FWD. LAP S. X
L 4	2	21*	42.78N 96.82E	6	***	****	180334	5-11-67 LUNAR ORB LO.F=80MM B&W	- NONE	2979K 37237500	86	1.8	27	-.	..
CAM.NAD.= 42.88N 94.55E SWING= 249. PHASE= 67. EMIS.ANG.= 5. CAM.RAD.= 4718.2 KM. SUN AZM=117.8															
LAC 29 BRUNO FABRY : W>1/2 MOON SPHERE : LAC 81 ANSGARIUS. : LAC 146 N. POLE FAR SIDE IN ANSEN. W3 >80N & LAC 64 HF. SMYTHI HE															
L 4	2	23*	43.72N 94.00E	6	***	****	180354	5-11-67 LUNAR ORB LO.F=80MM B&W	- NONE	2983K 37287500	78	1.9	27	-.	78
CAM.NAD.= 43.16N 94.50E SWING= 291. PHASE= 67. EMIS.ANG.= 5. CAM.RAD.= 4722.2 KM. SUN AZM=118.3															
LAC 29 BRUNO FABRY : W>1/2 MOON SPHERE : LUNAR N. HEMISPHE : LAC 81 ANSGARIUS, W. H. SMYTHI & LAC 6															
L 4	2	29*	41.32N 89.17E	7	***	****	060416	5-12-67 LUNAR ORB LO.F=80MM B&W	- NONE	2981K 37262500	149	1.1	25	-.	13
CAM.NAD.= 42.89N 87.94E SWING= 313. PHASE= 67. EMIS.ANG.= 3. CAM.RAD.= 4720.2 KM. SUN AZM=119.1															
DEGRADED NEGATIVE & LAC 29 BRUNO FABRY															
L 4	2	30*	43.98N 85.39E	7	***	****	063105	5-12-67 LUNAR ORB LO.F=80MM B&W	- NONE	3309K 41362500	196	9.7	22	-.	90
CAM.NAD.= 63.17N 93.00E SWING= 11. PHASE= 77. EMIS.ANG.= 29. CAM.RAD.= 5048.2 KM. SUN AZM=112.3															
DEGRADED NEGATIVE & LAC 29 BRUNO FABRY															
L 4	1	36	41.65N 85.89E	8	***	****	180452	5-12-67 LUNAR ORB HI. 610MM B&W	- NONE	2982K 4088525	107	2.1	27	-.	90
CAM.NAD.= 42.83N 81.30E SWING= 271. PHASE= 68. EMIS.ANG.= 6. CAM.RAD.= 4721.2 KM. SUN AZM=116.6															
LAC 29 BRUNO FABRY : NORTHERN PART OF LAC 45 PLUTARCH, H : EASTERN PART OF LAC 15 M. HUMBOLDTIANUM & LAC 16															
L 4	1	41*	41.26N 80.11E	9	***	****	060535	5-13-67 LUNAR ORB HI. 610MM B&W	- NONE	2984K 4091803	109	2.5	28	-.	90
CAM.NAD.= 42.85N 74.64E SWING= 273. PHASE= 69. EMIS.ANG.= 7. CAM.RAD.= 4723.2 KM. SUN AZM=116.7															
DEGRADED NEGATIVE : LAC 28 GAUSS, MESSALA, ZEN : LAC 29 BRUNO FABRY & EASTERN PART OF LAC 15 M. HUMBOLDTIANUM															
L 4	1	48*	41.21N 71.77E	10	***	****	180618	5-13-67 LUNAR ORB HI. 610MM B&W	- NONE	2983K 4090164	110	1.9	26	-.	..
CAM.NAD.= 42.84N 67.95E SWING= 282. PHASE= 69. EMIS.ANG.= 5. CAM.RAD.= 4722.2 KM. SUN AZM=114.8															
LAC 28 GAUSS, MESS : LAC 15 M. HUMBOLDT : LAC 44 CLEMEDES, : LAC 45 PLUTARCH, HAHN & LAC 29 BRUNO FABRY															
L 5	1	181	41.85N 109.39E	74	***	****	175642	8-17-67 LUNAR ORB HI. 610MM B&W	- NONE	1181K 1936066	279	23.4	11	-.	..
CAM.NAD.= 41.61N 134.27E SWING= 90. PHASE= 121. EMIS.ANG.= 42. CAM.RAD.= 2920.2 KM. SUN AZM=261.6															
WESTERN PART OF LAC 30 E. SZILARD WELLS : S. W. PART OF LAC 16 & N. E. PART OF LAC 29 BRUNO FABRY															
L 5	2	181	41.96N 109.41E	74	***	****	175642	8-17-67 LUNAR ORB LO.F=80MM B&W	- NONE	1181K 19762500	279	23.4	11	-.	..
CAM.NAD.= 41.61N 134.27E SWING= 90. PHASE= 121. EMIS.ANG.= 42. CAM.RAD.= 2920.2 KM. SUN AZM=261.6															
LAC 30 E. SZILARD : W1/4 MOONS SPHERE : LAC 47 OLCOTT : LAC 16 & LAC 29 BRUNO FABRY															

NOVA SI BOVA TANTINO  
MIL NO ALTIORIS TANTINO

MIS	MAG	FR, PHOTO	PRIN. PT.	URB	GLT	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	AT 11 SCALE AT	TILT	SUN SIDE.			
SION	ROLL	ON	LAT.	N	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
#	#	MAIN	LONG.		(ESTIMATED)			TYPE		M=N.MJ	PT.	FR.	VERT	LAP	S. S
										K*KH.					

TOTAL PHOTOS IN THIS GROUP = 9

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), ( ), ( ), ( ) = NO INFO    @ = APPROXIMATELY    NEXT TO MAG#, R=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER X AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

L	S	MAG	PHOTO	PRIN.PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T	I	L	T	SUN	SIDE,
#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
		MAIN	LONG.			(ESTIMATED)						M=N.MI	PT.	FR.	LAP				
		#	#									K=KM.	VERT	S, R					
L 4	2	128	69.42N	9.43W	23	000	070417	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3369K	42112500	171	1.0	12	-.	..	
		CAM.NAD.= 71.90N 10.32W		SWING= 347.		PHASE= 80.		EMIS.ANG.= 3.		CAM.RAD.= 5108.2 KM.		SUN AZM=122.3							
		LAC 3 PHILULAUS,BAHRUN		; W>1/2 MOON SPHERE				; LAC 58 COPERNICUS,RFINHOLO		6		LAC 17							
L 4	1	146	2.79N	136.09E	26	000	233025	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	6148K	10070698	25	.8	00	-.	..	
		CAM.NAD.= .16N 134.86E		SWING= 45.		PHASE= 109.		EMIS.ANG.= 4.		CAM.RAD.= 7887.2 KM.		SUN AZM=271.7							
		LAC 66 MENUELEEV		; W1/4 MOONS SPHERE		; LAC 30 E.SZILARD		; LAC 47 OLCOTT		6		TERMINATOR							
L 4	1	147	2.09N	136.14E	26	000	233057	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	6149K	10080328	31	.7	00	-.	90	
		CAM.NAD.= .00N 134.87E		SWING= 51.		PHASE= 109.		EMIS.ANG.= 3.		CAM.RAD.= 7888.2 KM.		SUN AZM=271.4							
		LAC 66 MENUELEEV		; W>1/2 MOON SPHERE		; LAC 30 E.SZILARD		; LAC 47 OLCOTT		6		TERMINATOR							
L 5	1	158	37.83N	126.77E	64	000	101006	8-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	1233K	2021311	278	24.2	11	-.	..	
		CAM.NAD.= 37.69N 152.57E		SWING= 89.		PHASE= 124.		EMIS.ANG.= 44.		CAM.RAD.= 2972.2 KM.		SUN AZM=263.2							
		EASTERN PART OF LAC 30 E.SZILARD WELLS						; NORTHERN PART OF LAC 47 OLCOTT		6		N. W. PART OF LAC 48 W.M.MOSCOVIEF							
L 5	2	158	37.94N	126.79E	64	000	101006	8-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1233K	15412500	278	24.2	11	-.	..	
		CAM.NAD.= 37.69N 152.57E		SWING= 90.		PHASE= 124.		EMIS.ANG.= 44.		CAM.RAD.= 2972.2 KM.		SUN AZM=263.2							
		LAC 30 E.SZILARD		; W1/4 MOONS SPHERE		; LAC 31 WIENER		; LAC 17		6		LAC 48 W.M.MOSCOVIEF							
L 5	1	163	38.04N	121.22E	67	000	194258	8-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	1231K	2018033	279	24.4	12	-.	..	
		CAM.NAD.= 37.62N 147.19E		SWING= 89.		PHASE= 123.		EMIS.ANG.= 45.		CAM.RAD.= 2970.2 KM.		SUN AZM=262.7							
		CENTRAL PART OF LAC 30 E.SZILARD WELLS						6 NORTHERN PART OF LAC 47 OLCOTT		6									
L 5	2	163	38.16N	121.24E	67	000	194259	8-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1231K	15387500	279	24.3	11	-.	..	
		CAM.NAD.= 37.62N 147.19E		SWING= 90.		PHASE= 123.		EMIS.ANG.= 45.		CAM.RAD.= 2970.2 KM.		SUN AZM=262.7							
		LAC 30 E.SZILARD		; W1/4 MOONS SPHERE		; LAC 31 WIENER		; LAC 17		6		LAC 48 W.M.MOSCOVIEF							
L 5	1	181	41.85N	134.39E	74	000	175642	8-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	1181K	1934066	279	23.4	11	-.	..	
		CAM.NAD.= 41.61N 134.27E		SWING= 90.		PHASE= 121.		EMIS.ANG.= 42.		CAM.RAD.= 2920.2 KM.		SUN AZM=261.6							
		WESTERN PART OF LAC 30 E.SZILARD WELLS						; S. W. PART OF LAC 16		6		N. E. PART OF LAC 29 BRUNO FARRY							
L 5	2	181	41.96N	134.41E	74	000	175642	8-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1181K	14762500	279	23.4	11	-.	..	
		CAM.NAD.= 41.61N 134.27E		SWING= 90.		PHASE= 121.		EMIS.ANG.= 42.		CAM.RAD.= 2920.2 KM.		SUN AZM=261.6							
		LAC 30 E.SZILARD		; W1/4 MOONS SPHERE		; LAC 47 OLCOTT		; LAC 16		6		LAC 29 BRUNO FARRY							

30

LAC 30 E. SZILARD WELLS

PAGE 66

MIS SION	MAG ROLL	FR, PHOTO ON	PRIN. PT. LAT.	ORB #	GET TIMES-HH M SEC (I=ESTIMATED)	GHT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUBE PRIN. M=N.MI PT. K=KM.	TILT AZ ANG. ANG. FR. VERT	SUN SIDE. FAD. LAP S. R
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TOTAL PHOTOS IN THIS GROUP = 9

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), ( ), ( ), ( ) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; 2P,2B,2S = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

SUN	ROLL	HAG	FR.	PHOTO	PRIN.	PT.	ORB	GEL	GMT	M-DA-YR	CAMERA-LENS OR SENSOR	FILM-EXPOSURE AND FILTER	ALT	SCALE AT TIDE	PRIN.	AZ	ANG.	FOD.	SUN SIDE.
L 4	1	1233	1-13N	162.38E	22	00	0000	232754	5-19-67	LUNAR ORB HI.	610MM B&W	-	NONE	6151K	10083607	44	04	00	-00
CAM.NAD.= 003 161.28E SWING= 64. PHASE= 111. EMIS.ANG.= 2. CAM.RAD.= 7890.2 KM. SUN AZM=271.1																			
DEGRADED NEGATIVE; LAC 67 SPENCER; LAC 31 WIENER; LAC 48 W.M.MOSCOVIENSE																			
L 5	1	85	36.73N	158.84E	44	00	0000	182940	8-13-67	LUNAR ORB HI.	610MM B&W	-	NONE	1239K	2031140	281	25.8	11	-00
CAM.NAD.= 37.81N 172.42W SWING= 89. PHASE= 127. EMIS.ANG.= 48. CAM.RAD.= 2978.2 KM. SUN AZM=262.9																			
WESTERN PART OF LAC 32 HUTTON; EASTERN PART OF LAC 31 WIENER; NORTHERN PART OF LAC 49 E.M.MOSCOVIE																			
L 5	1	103	38.72N	150.81E	49	00	0000	102451	8-14-67	LUNAR ORB HI.	610MM B&W	-	NONE	1237K	2027869	280	25.4	11	-00
CAM.NAD.= 37.85N 178.75E SWING= 90. PHASE= 126. EMIS.ANG.= 47. CAM.RAD.= 2976.2 KM. SUN AZM=262.9																			
EASTERN PART OF LAC 31 WIENER; N. E. PART OF LAC 48 W.M.MOSCOV & N. W. PART OF LAC 49 E.M.MOSCOVIE																			
L 5	2	133	38.84N	150.83E	49	00	0000	102451	8-14-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1237K	15462500	281	25.4	11	-00	
CAM.NAD.= 37.85N 178.75E SWING= 90. PHASE= 126. EMIS.ANG.= 47. CAM.RAD.= 2976.2 KM. SUN AZM=262.9																			
LAC 31 WIENER; 1/4 MOONS SPHERE; LAC 32 HUTTON; LAC 18 TIKHOV; LAC 49 E.M.MOSCOVIE																			
L 5	1	124	38.97N	142.78E	54	00	0000	022004	8-15-67	LUNAR ORB HI.	610MM B&W	-	NONE	1237K	2027869	281	25.0	11	-00
CAM.NAD.= 37.83N 170.09E SWING= 91. PHASE= 125. EMIS.ANG.= 46. CAM.RAD.= 2976.2 KM. SUN AZM=262.9																			
CENTRAL PART OF LAC 31 WIENER; NORTHERN PART OF LAC 48 W.M.MOSCOVIENSE																			
L 5	2	124	39.09N	142.80E	54	00	0000	022004	8-15-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1237K	15462500	281	25.0	11	-00	
CAM.NAD.= 37.82N 170.09E SWING= 91. PHASE= 125. EMIS.ANG.= 46. CAM.RAD.= 2976.2 KM. SUN AZM=262.9																			
LAC 31 WIENER; 1/4 MOONS SPHERE; LAC 18 TIKHOV; LAC 32 HUTTON; LAC 49 E.M.MOSCOVIE																			
L 5	2	158	37.94N	126.79E	64	00	0000	101006	8-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1233K	15412500	278	24.2	11	-00	
CAM.NAD.= 37.62N 152.57E SWING= 90. PHASE= 124. EMIS.ANG.= 44. CAM.RAD.= 2972.2 KM. SUN AZM=263.2																			
LAC 30 E.SILAND; 1/4 MOONS SPHERE; LAC 31 WIENER; LAC 17; LAC 48 W.M.MOSCOVIE																			
L 5	2	163	38.16N	121.24E	67	00	0000	194259	8-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1231K	15387500	279	24.3	11	-00	
CAM.NAD.= 37.62N 147.19E SWING= 90. PHASE= 123. EMIS.ANG.= 45. CAM.RAD.= 2970.2 KM. SUN AZM=262.7																			
LAC 30 E.SILAND; 1/4 MOONS SPHERE; LAC 31 WIENER; LAC 17; LAC 48 W.M.MOSCOVIE																			

TOTAL PHOTOS IN THIS GROUP = 8

REPRODUCTION OF THE  
 ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; FKTR=EXTAR 2.8 LENS;  
 HSB=HASSELBLAD; NAUH=MAUREN; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (UH) = TWO ZEROS;  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T I L T	SUN	SIDE	
SION	HULL	OR	LAT.	N	TIMES-HR	M SEC				SENSOR	AND FILTER	TUN	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	MAIN	LONG.	(I=ESTIMATED)						TYPE		M=N.MI	PT.	FR.	LAP			
												K=KM.			VERT	R, R		
L 4	1	995	3.51N 174.92E	18	000	232421	5-17-67	LUNAR	ORB HI.	610MM B&W	-	NONE	6142K	10068852	293	2.4	00	-..
			CAM-NAU.= .11N 172.38W		SWING=	294.		PHASE=	115.	EMIS-ANG.=	11.		CAM-RAD.=	7881.2 KM.		SUN AZM=	271.5	
			DEGRADED NEGATIVE ; LAC 68 SHARONOV			01/4		MOONS	SPHERE ;	LAC 32 HUTTON							6 LAC 49 E.M.MOSCOWIEN	
L 5	2	53	48.97N 176.11W	29	000	184006	8-11-67	LUNAR	ORB LO.F=	80MM B&W	-	NONE	1191K	14887500	297	25.6	9	-..
			CAM-NAU.= 42.56N 147.00W		SWING=	107.		PHASE=	126.	EMIS-ANG.=	47.		CAM-RAD.=	2930.2 KM.		SUN AZM=	261.6	
			LAC 18 TIKHOV			01/4		MOONS	SPHERE ;	LAC 50 MORSE							6 LAC 32 HUTTON	
L 5	1	79	38.60N 167.55E	39	000	023432	8-13-67	LUNAR	ORB HI.	610MM B&W	-	NONE	1245K	2040984	281	25.8	11	-..
			CAM-NAU.= 37.73N 163.64W		SWING=	89.		PHASE=	128.	EMIS-ANG.=	48.		CAM-RAD.=	2984.2 KM.		SUN AZM=	263.3	
			CENTRAL PART OF LAC 32 HUTTON							N. E. PART OF LAC 49 E.M.MOSCOV							6 N. W. PART OF LAC 50 MORSE	
L 5	2	79	38.78N 167.58E	39	000	023432	8-13-67	LUNAR	ORB LO.F=	80MM B&W	-	NONE	1245K	15562500	281	25.8	11	-..
			CAM-NAU.= 37.72N 163.64W		SWING=	89.		PHASE=	128.	EMIS-ANG.=	48.		CAM-RAD.=	2984.2 KM.		SUN AZM=	263.3	
			LAC 32 HUTTON			01/4		MOONS	SPHERE ;	LAC 33 SCHNELLER							6 LAC 19 CARNOT ROMAN	
L 5	1	85	38.73N 158.04E	44	000	182940	8-13-67	LUNAR	ORB HI.	610MM B&W	-	NONE	1239K	2031148	281	25.8	11	-..
			CAM-NAU.= 37.81N 172.42W		SWING=	89.		PHASE=	127.	EMIS-ANG.=	48.		CAM-RAD.=	2978.2 KM.		SUN AZM=	262.9	
			WESTERN PART OF LAC 32 HUTTON							EASTERN PART OF LAC 31 WIENER							6 NORTHERN PART OF LAC 49 E.M.MOSCOVIE	
L 5	2	85	38.85N 158.07E	44	000	182940	8-13-67	LUNAR	ORB LO.F=	80MM B&W	-	NONE	1239K	15487500	281	25.8	11	-..
			CAM-NAU.= 37.80N 172.42W		SWING=	90.		PHASE=	127.	EMIS-ANG.=	48.		CAM-RAD.=	2978.2 KM.		SUN AZM=	262.9	
			LAC 32 HUTTON			01/4		MOONS	SPHERE ;	LAC 18 TIKHOV							6 LAC 17	
L 5	2	103	38.84N 150.83E	49	000	102451	8-14-67	LUNAR	ORB LO.F=	80MM B&W	-	NONE	1237K	15462500	281	25.4	11	-..
			CAM-NAU.= 37.85N 178.75E		SWING=	90.		PHASE=	126.	EMIS-ANG.=	47.		CAM-RAD.=	2976.2 KM.		SUN AZM=	262.9	
			LAC 31 WIENER			01/4		MOONS	SPHERE ;	LAC 32 HUTTON							6 LAC 49 E.M.MOSCOVIE	
L 5	2	124	39.09N 142.80E	54	000	022039	8-15-67	LUNAR	ORB LO.F=	80MM B&W	-	NONE	1237K	15462500	281	25.0	11	-..
			CAM-NAU.= 37.82N 170.09E		SWING=	91.		PHASE=	125.	EMIS-ANG.=	46.		CAM-RAD.=	2976.2 KM.		SUN AZM=	262.9	
			LAC 31 WIENER			01/4		MOONS	SPHERE ;	LAC 18 TIKHOV							6 LAC 49 E.M.MOSCOVIE	

TOTAL PHOTOS IN THIS GROUP = 8



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), UN(0) = NO INFO \* = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G=CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; 2P,2B,2S = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 1/0 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NFG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB N	GET TIMES-HH	GHT M SEC (I=ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TIDE	SCALE AT PRIN.	T I L T AZ ANG.	SUN SIDE, ANG. FWD. LAP
L 5	1	39	38.71N 159.46W	19	***	0000	105251	8-10-67 LUNAR ORB HI. 610MM B&W	- NONE	1252K	2052459	283	26.8 10 -..
CAM.NAD.= 37.14N 128.86W SWING= 89. PHASE= 131. EMIS.ANG.= 51. CAM.RAD.= 2991.2 KM. SUN AZM=263.6													
EASTERN PART OF LAC 33 SCHNELLER ; WESTERN PART OF LAC 34 FOWLER & NORTHERN PART OF LAC 51 JACKSON													
L 5	2	39	38.84N 159.43W	19	***	0000	105252	8-10-67 LUNAR ORB LO.F=80MM B&W	- NONE	1252K	15650000	283	24.8 10 -..
CAM.NAD.= 37.14N 128.86W SWING= 90. PHASE= 131. EMIS.ANG.= 51. CAM.RAD.= 2991.2 KM. SUN AZM=263.6													
LAC 33 SCHNELLER ; 1/4 MOONS SPHERE ; LIMB OR HORIZON ; LAC 20 COULOMB & LAC 52 JOULE E.MACH													
L 5	1	53	46.85N 176.10W	29	***	0000	184006	8-11-67 LUNAR ORB HI. 610MM B&W	- NONE	1190K	1950870	297	25.6 9 -..
CAM.NAD.= 42.56N 146.99W SWING= 107. PHASE= 126. EMIS.ANG.= 47. CAM.RAD.= 2925.2 KM. SUN AZM=261.6													
LAC 18 ICHKOV ; N. W. PART OF LAC 33 SCHNELLER													
L 5	2	53	48.97N 176.11W	29	***	0000	184006	8-11-67 LUNAR ORB LO.F=80MM B&W	- NONE	1191K	14887500	297	25.6 9 -..
CAM.NAD.= 42.56N 147.00W SWING= 107. PHASE= 126. EMIS.ANG.= 47. CAM.RAD.= 2930.2 KM. SUN AZM=261.6													
LAC 18 ICHKOV ; 1/4 MOONS SPHERE ; LAC 50 MORSE ; LAC 51 JACKSON & LAC 32 HUTTON													
L 5	2	79	38.78N 167.58E	39	***	0000	023432	8-13-67 LUNAR ORB LO.F=80MM B&W	- NONE	1745K	15562500	281	25.8 11 -..
CAM.NAD.= 37.72N 163.64W SWING= 89. PHASE= 128. EMIS.ANG.= 48. CAM.RAD.= 2984.2 KM. SUN AZM=263.3													
LAC 32 HUTTON ; 1/4 MOONS SPHERE ; LAC 33 SCHNELLER ; LAC 18 ICHKOV & LAC 19 CARNOT ROWLAN													

TOTAL PHOTOS IN THIS GROUP = 5

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 16 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

SUN	ROLL	FR	MAG	PHOTO	PRIN.PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	TILT	SUN	SIDE,	
																		SENSOR
#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	
L 5	2	31	28.04N	135.71W	11	***	093219	8-09-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	1364K	17050000	280	21.8	2	-. **
CAN.NAD.= 26.12N 113.59W SWING= 89. PHASE= 130. EMIS.ANG.= 42. CAM.RAD.= 3103.2 KM. SUN AZH=270.8																		
LAC 52 JOULE E.MA ; W1/4 MOONS SPHERE ; LUNAR W. HEMISPHE ; LAC 122 LANGMUIR STETSON 6 LAC 121 APOLLO																		
L 5	2	32	24.94N	138.09W	13	***	155741	8-09-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	1397K	17462500	281	21.3	1	-. **
CAN.NAD.= 22.60N 116.73W SWING= 90. PHASE= 130. EMIS.ANG.= 41. CAM.RAD.= 3136.2 KM. SUN AZH=271.2																		
LAC 52 JOULE E.MA ; W1/4 MOONS SPHERE ; LUNAR W. HEMISPHE ; LAC 88 S.W.HERTZSPRUNG,PASCHEN 6 LAC 34 FOWLER																		
L 5	1	39	38.71N	159.46W	19	***	105251	8-10-67	LUNAR	ORB HI. 610MM B&W	-	NONE	1252K	2052459	283	26.8	10	-. **
CAN.NAD.= 37.14N 128.86W SWING= 89. PHASE= 131. EMIS.ANG.= 51. CAM.RAD.= 2991.2 KM. SUN AZH=263.6																		
EASTERN PART OF LAC 33 SCHNELLER 1 WESTERN PART OF LAC 34 FOWLER 6 NORTHERN PART OF LAC 51 JACKSON																		

TOTAL PHOTOS IN THIS GROUP = 3



MIS	MAG	FR	PHOTO	PRIN	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	I	L	T	SUN	SIDE,
SION	HULL	OR	LAT.	#	TIMES-HR	M	SEC			SENSOR	AND FILTER	TUDE	PRIN	AZ	ANG.	ANG.	FWD.			
#	#	MAIN	LONG.	(#=ESTIMATED)						TYPE		M=N.MI	PT.	FR.	VERT	R.	R			
L 5	1	315	27.92N	135.74W	11	000	0000	093219	8-09-67	LUNAR ORB HI. 610MM B&W		NONE	1364K	2236066	280	21.8	2	-000		
		CAM. RAD. =	26.13N	113.59W		SWING =	89.			PHASE = 130. EMIS. ANG. = 42.		CAM. RAD. =	3100.2 KM.		SUN AZH = 270.8					
			DEGRADED NEGATIVE							1 LAC 52 JOULE E. MACH			6 LAC 35 LANDAU							

TOTAL PHOTOS IN THIS GROUP = 10



MIS MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	TILT	SUN SIDE,				
SION ROLL	OR	LAT.	*	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	"	MAIN	LONG.	(I=ESTIMATED)			TYPE		M=N.MI	PT.	FR.	LAP			
									K=KM.		VERT				
L 5 1	12	59.24N	113.20W	2 ***	***	112221	8-06-67	LUNAR ORB HI. 610MM B&W	-	NONE	2659K	4359016	284	9.6 R	-190
		CAM. RAD. = 58.76N	81.07W	SWING = 89.		PHASE = 107.	EMIS. ANG. = 25.		CAM. RAD. =	4398.2	KM.		SUN AZM = 260.1		
		LAC 20 COULOMB		1/4 MOONS SPHERE		LAC 21 N. GERARD. B		LAC 9 CREMONA					6	LAC 36 RONTGEN LORENZ	

TOTAL PHOTOS IN THIS GROUP = 10

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-), (+), ( ), (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
HSB=HASSELBLAD; MAUR=MAURER; 2P,ZH,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
100 AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0,0

MIS SION	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR SENSOR	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TIDE PRIN.	T I L T AZ ANG.	SUN SIDE, ANG. FWD. LAP		
#	#	#	LAT.	LONG.	#	TIMES-HR M SEC (ESTIMATED)		TYPE		M=N.MI K=KM.	PT. VERT	FR. LAP		
L 4	1	169	13.69N	68.49W	30	000 0000	180312	5-23-67 LUNAR ORB HI.	610MM B&W	-	NONE 2672K	4380328 248	1.8 17	-26
CAM.NAD.= 14.14N 67.33W SWING= 62. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 4411.2 KM. SUN AZM= 93.5														
LAC 56 HEVELLIUS, N; LAC 55 VASCO DE GAMA; LAC 38 SELEUCUS, S; LAC 37 STRUVE, DALTON & LAC 74 GRIMALDI, BILL														
L 4	1	170	41.77N	59.66W	30	000 0000	183518	5-23-67 LUNAR ORB HI.	610MM B&W	-	NONE 2871K	1707557 108	2.2 20	-75
CAM.NAD.= 43.4UN 64.22W SWING= 271. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4610.2 KM. SUN AZM= 107.7														
LAC 23 RUMKER, SHARP; LAC 22 SE. GERARD, BUNSEN, HARDING; LAC 10 BARRAGE, N. PROCELARM. & LAC 11 J. HERSCHEL, J														
L 4	1	174	13.37N	76.00W	31	000 0000	060318	5-24-67 LUNAR ORB HI.	610MM B&W	-	NONE 2673K	4381967 255	1.3 16	-16
CAM.NAD.= 13.91N 73.95W SWING= 69. PHASE= 71. EMIS.ANG.= 3. CAM.RAD.= 4412.2 KM. SUN AZM= 93.0														
EASTERN PART OF LAC 55 VASCO DE GAMA; EASTERN PART OF LAC 37 STRUVE, DAL; LAC 73 RICCIOLI, NE. ORIENT & LAC 38 SELEUCUS, SCHR														
L 4	1	175	41.29N	66.78W	31	000 0000	063541	5-24-67 LUNAR ORB HI.	610MM B&W	-	NONE 2872K	4708197 116	2.0 19	-76
CAM.NAD.= 42.86N 70.79W SWING= 280. PHASE= 76. EMIS.ANG.= 5. CAM.RAD.= 4611.2 KM. SUN AZM= 106.8														
LAC 22 SE. GERARD, BUNSEN, HARDING; LAC 23 RUMKER, SHARP; LAC 10 BARRAGE, N. PROCELARM. & LAC 11 J. HERSCHEL, J														
L 4	1	182	15.26N	81.41W	32	000 0000	180342	5-24-67 LUNAR ORB HI.	610MM B&W	-	NONE 2674K	4383607 329	1.0 16	-46
CAM.NAD.= 13.88N 80.57W SWING= 143. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4413.2 KM. SUN AZM= 93.7														
CENTRAL PART OF LAC 55 VASCO DE GAMA; CENTRAL PART OF LAC 37 STRUVE, DAL; LAC 73 RICCIOLI, NE. ORIENT & LAC 22 SE. GERARD, BUN														
L 4	1	183	43.53N	71.02W	32	000 0000	183607	5-24-67 LUNAR ORB HI.	610MM B&W	-	NONE 2874K	4711475 79	2.8 20	-79
CAM.NAD.= 42.84N 77.39W SWING= 243. PHASE= 77. EMIS.ANG.= 8. CAM.RAD.= 4613.2 KM. SUN AZM= 108.9														
EASTERN PART OF LAC 22 SE. GERARD, BUNSEN, HARDING; LAC 23 RUMKER, SHA & LAC 37 STRUVE, DALTON														
L 4	1	188	13.38N	89.22W	33	000 0000	060409	5-25-67 LUNAR ORB HI.	610MM B&W	-	NONE 2675K	4385246 245	1.3 15	-27
CAM.NAD.= 13.92N 87.19W SWING= 69. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4414.2 KM. SUN AZM= 92.7														
LAC 55 VASCO DE GAMA; LAC 72 ELVEY NOBEL; LAC 37 STRUVE, DAL; LAC 54 BELB LAUE & LAC 73 RICCIOLI, NE. O														
L 4	1	189	41.71N	79.99W	33	000 0000	063636	5-25-67 LUNAR ORB HI.	610MM B&W	-	NONE 2878K	4718033 110	1.9 18	-77
CAM.NAD.= 42.88N 84.00W SWING= 273. PHASE= 77. EMIS.ANG.= 5. CAM.RAD.= 4617.2 KM. SUN AZM= 106.1														
WESTERN PART OF LAC 22 SE. GERARD, BUNSEN, HARDING; LAC 21 N. GERARD, B & LAC 10 BARRAGE, N. PROCELARM.														
L 4	1	196	12.86N	94.86W	34	000 0000	180431	5-25-67 LUNAR ORB HI.	610MM B&W	-	NONE 2675K	4385246 224	.9 15	-25
CAM.NAD.= 13.88N 93.82W SWING= 38. PHASE= 73. EMIS.ANG.= 2. CAM.RAD.= 4414.2 KM. SUN AZM= 92.7														
EASTERN PART OF LAC 72 ELVEY NOBEL; EASTERN PART OF LAC 54 BELB LAUE; LAC 90 LOWELL & LAC 37 STRUVE, DALTON														

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LAC 37 STRUVE, DALTON

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MIS	MAG	FR	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDE.		
SION	HULL	OR	LAT.	#	TIMES-HR	M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
#	#	HAIN	LONG.		(I-ESTIMATED)					TYPE		M=N.MI	PT.		FR.	LAP	
		#										K=KM.			VERT	R, B	

TOTAL PHOTOS IN THIS GROUP = 9



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. BRACKET MOUNTED; G. CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: S.W.A. = SUPER WIDE ANGLE LENS; EXTR. = EXTAR 2.8 LENS;  
 HSB = HASSELBLAD; MAUR = MAURER; ZP, ZB, ZS = ZEISS LENS (PLANAR, BIOGEN, SONAR); FOCAL LENGTH (MM) & MAX. F-OPENING  
 10 = AS EXPOS. SPEED = 1/1000 (OR \*\* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

SUN	ROLL	#	MAIN	FR. PHOTO	PRIN. PT.	LAT.	LONG.	URA	GET	GMT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N,M I K=KM.	SCALE AT PRIN. PT.	TILT AZ	L ANG.	I ANG.	SUN SIDE FAD. LAP S. 2	
																				#
L 4	2	140	71.06N	16.31W	25	000	0000	070801	5-21-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3355K	41937500	117	1.2	13	-.	00
CAM.NAD.= 72.21N 22.53W SWING= 297. PHASE= 81. EMIS.ANG.= 3. CAM.RAD.= 5094.2 KM. SUN AZH=127.7																				
LAC 3 PHILOLAUS,B; W>1/2 MOON SPHERE; LAC 38 SELEUCUS,S; LAC 1 N.POLE NEAR SIDE BYRD,PEARY >80 N 6 LAC 16																				
L 4	2	149	15.05S	48.76W	27	000	0000	052940	5-22-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2720K	34000000	127	.7	18	-.	00
CAM.NAD.= 14.40S 49.64W SWING= 313. PHASE= 74. EMIS.ANG.= 2. CAM.RAD.= 4459.2 KM. SUN AZH= 84.4																				
LAC 75 LETRONNE,F; W>1/2 MOON SPHERE; LAC 136 BAILLEY,K; LAC 38 SELEUCUS,SCHRÖTER V. 6 LAC 25 CASSINI,ALPS																				
L 4	1	150	12.74N	49.29W	27	000	0000	060012	5-22-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2468K	4373770	234	1.3	18	-.	23
CAM.NAD.= 13.91N 47.59W SWING= 48. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 4407.2 KM. SUN AZH= 93.5																				
LAC 57 KEPLER,ENC; LAC 56 HEVELIUS,R; LAC 39 ARISTARCHU; LAC 38 SELEUCUS,SCHRÖTER V. 6 LAC 75 LETRONNE,FLAM																				
L 4	1	151	40.88N	40.20W	27	000	0000	063228	5-22-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2466K	4698361	118	2.4	21	-.	76
CAM.NAD.= 42.84N 44.74W SWING= 282. PHASE= 75. EMIS.ANG.= 6. CAM.RAD.= 4605.2 KM. SUN AZH=108.3																				
EASTERN PART OF LAC 23 HUMKER,SHARP; LAC 24 SINUS IRID 6 LAC 11 J.HERSCHEL,JURAS,BOUGUER																				
L 4	1	157	13.36N	56.27W	28	000	0000	180116	5-22-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2469K	4375410	255	1.4	17	-.	28
CAM.NAD.= 13.91N 54.17W SWING= 69. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 4408.2 KM. SUN AZH= 73.4																				
EASTERN PART OF LAC 56 HEVELIUS,REINER; EASTERN PART OF LAC 38 SELEUCUS,S 6 NORTHERN PART OF LAC 74 GRIMALDI,HIL																				
L 4	1	158	41.99N	47.66W	28	000	0000	183333	5-22-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2466K	4698361	106	1.7	20	-.	78
CAM.NAD.= 42.85N 51.22W SWING= 271. PHASE= 75. EMIS.ANG.= 4. CAM.RAD.= 4605.2 KM. SUN AZH=107.7																				
EASTERN PART OF LAC 23 HUMKER,SHAR; LAC 24 SINUS IRIDU; LAC 111 WILHELM,E; LAC 38 SELEUCUS,SCHRÖTER V. 6 LAC 39 ARISTARCH																				
L 4	1	162	13.22N	62.17W	29	000	0000	060208	5-23-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2470K	4377049	243	1.0	17	-.	30
CAM.NAD.= 13.93N 60.75W SWING= 57. PHASE= 71. EMIS.ANG.= 3. CAM.RAD.= 4409.2 KM. SUN AZH= 93.4																				
WESTERN PART OF LAC 56 HEVELIUS,REINER; CENTRAL PART OF LAC 38 SELEUCUS,S 6 N. W. PART OF LAC 74 GRIMALDI,HIL																				
L 4	1	163	41.21N	53.38W	29	000	0000	063426	5-23-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2467K	4700000	115	2.2	20	-.	76
CAM.NAD.= 42.87N 57.71W SWING= 279. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4406.2 KM. SUN AZH=107.7																				
CENTRAL PART OF LAC 23 HUMKER,SHARP; LAC 10 BABBAGE,N.PR; LAC 11 J.HERSCHEL,J 6 NORTHERN PART OF LAC 38 SELEUCUS,SCH																				
L 4	1	169	13.69N	68.49W	30	000	0000	180302	5-23-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2672K	4380328	248	.8	17	-.	26
CAM.NAD.= 14.14N 67.33W SWING= 62. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 4411.2 KM. SUN AZH= 93.5																				
LAC 56 HEVELIUS,R; LAC 55 VASCODEGAM; LAC 38 SELEUCUS,S; LAC 37 STRUVE,DALTON 6 LAC 74 GRIMALDI,BILL																				

MIS SION	MAG ROLL	FR, PHOTO OR	PRIN, PT. LAT.	ORB M	GET TIMES-HH M SEC (I=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=N, MI PT. K=KM.	T I L T AZ ANG. FR. VERT	SUN SIDE, ANG. FWD. LAP R, R
L 4	1	170	41.77N	59.60W	30	000	183518	5-23-67 LUNAR ORB HI. 610MM B&W	- NONE	2871K 4706557	108 2.2 20	-.75
CAM.NAD.= 43.00N 64.22W SWING= 271. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4610.2 KM. SUN AZH= 107.7												
LAC 23 HUMKER, SHARP ; LAC 22 SE. GERARD, BUNSEN, HARDING ; LAC 10 BABBAGE, N. PROCELARM. & LAC 11 J. HERSCHEL, J												
L 4	1	174	13.37N	76.00W	31	000	060318	5-24-67 LUNAR ORB HI. 610MM B&W	- NONE	2673K 4381967	255 1.3 16	-.16
CAM.NAD.= 13.91N 73.95W SWING= 69. PHASE= 71. EMIS.ANG.= 3. CAM.RAD.= 4412.2 KM. SUN AZH= 93.0												
EASTERN PART OF LAC 55 VASCO DE GAMA ; EASTERN PART OF LAC 37 STRUVE, DAL ; LAC 73 RICCIOLI, NE. ORIENT & LAC 38 SELEUCUS, SCHRO												
L 4	1	175	41.29N	66.78W	31	000	063541	5-24-67 LUNAR ORB HI. 610MM B&W	- NONE	2872K 4708197	116 2.0 19	-.76
CAM.NAD.= 42.86N 70.79W SWING= 280. PHASE= 76. EMIS.ANG.= 5. CAM.RAD.= 4611.2 KM. SUN AZH= 106.8												
LAC 24 SE. GERARD, BUNSEN, HARDING ; LAC 23 HUMKER, SHARP ; LAC 10 BABBAGE, N. PROCELARM. & LAC 11 J. HERSCHEL, J												
L 4	2	187	14.96S	89.06W	33	000	053334	5-25-67 LUNAR ORB LO. F=80MM B&W	- NONE	2723K 34037500	145 .5 14	-.00
CAM.NAD.= 14.36S 89.49W SWING= 330. PHASE= 77. EMIS.ANG.= 1. CAM.RAD.= 4462.2 KM. SUN AZH= 85.4												
LAC 73 RICCIOLI, NE. ORIENTAL ; W>1/2 MOON SPHERE ; LAC 143 S. HAUSEN LEGENTIL & LAC 36 RONTGEN LORE												
L 5	1	202	24.83N	49.54W	80	000	121029	8-18-67 LUNAR ORB HI. 610MM B&W	- NONE	134K 219672	294 6.0 15	-.00
CAM.NAD.= 24.64N 49.08W SWING= 199. PHASE= 68. EMIS.ANG.= 6. CAM.RAD.= 1873.2 KM. SUN AZH= 95.7												
WESTERN PART OF LAC 39 ARISTARCHUS & EASTERN PART OF LAC 38 SELEUCUS, SCHROTER V.												
L 5	2	202	24.84N	49.56W	80	000	121029	8-18-67 LUNAR ORB LO. F=80MM B&W	- NONE	134K 1675000	294 6.1 15	-.00
CAM.NAD.= 24.64N 49.08W SWING= 199. PHASE= 68. EMIS.ANG.= 7. CAM.RAD.= 1873.2 KM. SUN AZH= 95.7												
WESTERN PART OF LAC 39 ARISTARCHUS & EASTERN PART OF LAC 38 SELEUCUS, SCHROTER V.												
L 5	1	203	25.22N	49.51W	80	000	121036	8-18-67 LUNAR ORB HI. 610MM B&W	- NONE	135K 221311	297 6.1 15	-.2
CAM.NAD.= 25.00N 49.04W SWING= 202. PHASE= 68. EMIS.ANG.= 7. CAM.RAD.= 1874.2 KM. SUN AZH= 95.8												
WESTERN PART OF LAC 39 ARISTARCHUS & EASTERN PART OF LAC 38 SELEUCUS, SCHROTER V.												
L 5	2	203	25.23N	49.52W	80	000	121036	8-18-67 LUNAR ORB LO. F=80MM B&W	- NONE	135K 1687500	297 6.3 15	-.86
CAM.NAD.= 25.01N 49.04W SWING= 202. PHASE= 68. EMIS.ANG.= 7. CAM.RAD.= 1874.2 KM. SUN AZH= 95.8												
WESTERN PART OF LAC 39 ARISTARCHUS & EASTERN PART OF LAC 38 SELEUCUS, SCHROTER V.												
L 5	1	204	25.61N	49.47W	80	000	121042	8-18-67 LUNAR ORB HI. 610MM B&W	- NONE	136K 222951	300 6.3 15	-.4
CAM.NAD.= 25.36N 49.00W SWING= 205. PHASE= 68. EMIS.ANG.= 7. CAM.RAD.= 1875.2 KM. SUN AZH= 95.9												
WESTERN PART OF LAC 39 ARISTARCHUS & EASTERN PART OF LAC 38 SELEUCUS, SCHROTER V.												
L 5	2	204	25.62N	49.48W	80	000	121043	8-18-67 LUNAR ORB LO. F=80MM B&W	- NONE	136K 1700000	300 6.4 15	-.87
CAM.NAD.= 25.37N 49.00W SWING= 205. PHASE= 68. EMIS.ANG.= 7. CAM.RAD.= 1875.2 KM. SUN AZH= 95.9												
WESTERN PART OF LAC 39 ARISTARCHUS & EASTERN PART OF LAC 38 SELEUCUS, SCHROTER V.												
L 5	1	205	25.99N	49.44W	80	000	121049	8-18-67 LUNAR ORB HI. 610MM B&W	- NONE	137K 224590	303 6.4 15	-.6
CAM.NAD.= 25.71N 48.96W SWING= 208. PHASE= 68. EMIS.ANG.= 7. CAM.RAD.= 1876.2 KM. SUN AZH= 96.1												
WESTERN PART OF LAC 39 ARISTARCHUS & EASTERN PART OF LAC 38 SELEUCUS, SCHROTER V.												
L 5	2	205	26.01N	49.45W	80	000	121049	8-18-67 LUNAR ORB LO. F=80MM B&W	- NONE	137K 1712500	303 6.6 15	-.87
CAM.NAD.= 25.72N 48.96W SWING= 208. PHASE= 68. EMIS.ANG.= 7. CAM.RAD.= 1876.2 KM. SUN AZH= 96.0												
WESTERN PART OF LAC 39 ARISTARCHUS & EASTERN PART OF LAC 38 SELEUCUS, SCHROTER V.												

## LAC 38 SELEUCUS, SCHROTER V.

MIS SIUN	MAG ROLL	PR, PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR	GMT M SEC (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE M=N.MI K=KM.	SCALE AT PRIN. PT.	T I L T A2 ANG. FR. VERT	SUN SIDE. ANG. FWD. LAP %, %
L 5	1	206	27.40N	52.78W	82	***	183317	8-18-67 LUNAR ORB HI. 610MM B&W	- NONE	142K	7327A7	295	5.9 15
CAM-NAD.= 27.20N 52.29W SWING= 200. PHASE= 69. EMIS-ANG.= 6.													
N. E. PART OF LAC 38 SELEUCUS, SCHROTER V.													
L 5	2	206	27.41N	52.79W	82	***	183307	8-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	142K	177500D	295	6.0 15
CAM-NAD.= 27.20N 52.29W SWING= 200. PHASE= 69. EMIS-ANG.= 6.													
N. E. PART OF LAC 38 SELEUCUS, SCHROTER V.													
L 5	1	207	27.75N	52.75W	82	***	183313	8-18-67 LUNAR ORB HI. 610MM B&W	- NONE	143K	234476	298	6.0 15
CAM-NAD.= 27.51N 52.25W SWING= 203. PHASE= 69. EMIS-ANG.= 6.													
N. E. PART OF LAC 38 SELEUCUS, SCHROTER V.													
L 5	2	207	27.76N	52.76W	82	***	183313	8-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	143K	178750D	298	6.1 15
CAM-NAD.= 27.52N 52.25W SWING= 203. PHASE= 69. EMIS-ANG.= 7.													
N. E. PART OF LAC 38 SELEUCUS, SCHROTER V.													
L 5	1	208	28.14N	52.71W	82	***	183319	8-18-67 LUNAR ORB HI. 610MM B&W	- NONE	144K	236066	301	6.2 15
CAM-NAD.= 27.87N 52.22W SWING= 206. PHASE= 69. EMIS-ANG.= 7.													
N. E. PART OF LAC 38 SELEUCUS, SCHROTER V.													
L 5	2	208	28.15N	52.72W	82	***	183320	8-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	144K	160000D	301	6.3 15
CAM-NAD.= 27.87N 52.21W SWING= 206. PHASE= 69. EMIS-ANG.= 7.													
N. E. PART OF LAC 38 SELEUCUS, SCHROTER V.													
L 5	1	209	28.56N	52.67W	82	***	183327	8-18-67 LUNAR ORB HI. 610MM B&W	- NONE	145K	237705	304	6.3 15
CAM-NAD.= 28.26N 52.17W SWING= 210. PHASE= 69. EMIS-ANG.= 7.													
N. E. PART OF LAC 38 SELEUCUS, SCHROTER V.													
L 5	2	209	28.57N	52.68W	82	***	183327	8-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	145K	181250D	304	6.5 15
CAM-NAD.= 28.26N 52.17W SWING= 209. PHASE= 69. EMIS-ANG.= 7.													
N. E. PART OF LAC 38 SELEUCUS, SCHROTER V.													

TOTAL PHOTOS IN THIS GROUP = 29

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, s = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR(O) = NO INFO W = APPROXIMATELY NEXT TO MAGN. BRACKET MOUNTED; G = CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NFG. AT PP IF ALT NOT D.O

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	L	T	SUN	SIDE,
STION	KULL	OR	LAT.				TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FAD.		
#	#	MAIN	LUNG.				(=ESTIMATED)			TYPE		M=N.MI	PT.	FR.	LAP				
												K=KM.		VERT	R.				
L 4	2	132	9.14S	29.59W	24	***	0000	172507	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2717K	33962500	1	3.4	19	-0.00	
			CAM.NAD.= 14.42S	29.69W			SWING= 188.		PHASE= 72.	EMIS.ANG.= 9.		CAM.RAD.= 4456.2 KM.				SUN AZM= 86.2			
			LAC 76 HIPHAEUS M	W>1/2 MOON SPHERE					LAC 125 SCHILLER, 1	LAC 39 ARISTARCHUS						6	LAC 25 CASSINI, ALPS		
L 4	1	133	18.73N	29.69W	24	***	0000	175540	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	2673K	4381967	340	3.3	19	-0.46	
			CAM.NAD.= 13.91N	27.86W			SWING= 156.		PHASE= 68.	EMIS.ANG.= 8.		CAM.RAD.= 4412.2 KM.				SUN AZM= 95.9			
			WESTERN PART OF	LAC 40 TIMOCHARIS, LAMBERT					LAC 39 ARISTARCHU	6		LAC 5A COPERNICUS, REINHOLD							
L 4	1	138	13.70N	36.45W	25	***	0000	055724	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	2671K	4378689	263	1.3	18	-0.13	
			CAM.NAD.= 13.92N	34.43W			SWING= 78.		PHASE= 68.	EMIS.ANG.= 3.		CAM.RAD.= 4410.2 KM.				SUN AZM= 94.0			
			EASTERN PART OF	LAC 57 KEPLER, ENCKE					LAC 39 ARISTARCHU	6		NORTHERN PART OF LAC 75 LETRONNE, FLA							
L 4	1	139	42.16N	28.25W	25	***	0000	062940	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	2672K	4708197	102	1.6	20	-0.78	
			CAM.NAD.= 42.81N	31.79W			SWING= 267.		PHASE= 74.	EMIS.ANG.= 4.		CAM.RAD.= 4411.2 KM.				SUN AZM= 108.6			
			CENTRAL PART OF	LAC 24 SINUS IRID					LAC 11 J.HERSCHEL, JURAS, ROUGUER	6		LAC 12 PLATO, ALPINE VAL.							
L 4	1	144	14.03N	41.76W	26	***	0000	175854	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	2669K	4375410	280	.5	19	-0.30	
			CAM.NAD.= 13.90N	41.01W			SWING= 94.		PHASE= 70.	EMIS.ANG.= 1.		CAM.RAD.= 4408.2 KM.				SUN AZM= 94.3			
			CENTRAL PART OF	LAC 57 KEPLER, ENCKE					LAC 39 ARISTARCHU	6		N. W. PART OF LAC 75 LETRONNE, FLA							
L 4	1	145	42.33N	33.70W	26	***	0000	183109	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	2668K	4701639	96	2.1	21	-0.70	
			CAM.NAD.= 42.81N	38.27W			SWING= 260.		PHASE= 75.	EMIS.ANG.= 5.		CAM.RAD.= 4407.2 KM.				SUN AZM= 109.1			
			WESTERN PART OF	LAC 24 SINUS IRIDUM					LAC 23 HUNKER, SHA	6		LAC 11 J.HERSCHEL, JURAS, ROUGUER							
L 4	1	150	12.70N	49.29W	27	***	0000	060012	5-22-67	LUNAR ORB HI. 610MM B&W	-	NONE	2668K	4373770	234	1.3	18	-0.23	
			CAM.NAD.= 13.91N	47.59W			SWING= 48.		PHASE= 70.	EMIS.ANG.= 3.		CAM.RAD.= 4407.2 KM.				SUN AZM= 93.5			
			LAC 57 KEPLER, ENC	LAC 56 HEVELIUS, R					LAC 39 ARISTARCHU	6		LAC 38 SELEUCUS, SCHRUTER V.				6	LAC 75 LETRONNE, FLAM		
L 4	1	151	40.88N	40.20W	27	***	0000	063228	5-22-67	LUNAR ORB HI. 610MM B&W	-	NONE	2666K	4698341	118	2.4	21	-0.76	
			CAM.NAD.= 42.84N	44.74W			SWING= 282.		PHASE= 75.	EMIS.ANG.= 6.		CAM.RAD.= 4405.2 KM.				SUN AZM= 108.3			
			EASTERN PART OF	LAC 23 HUNKER, SHARP					LAC 24 SINUS IRID	6		LAC 11 J.HERSCHEL, JURAS, ROUGUER							
L 4	2	152	69.78N	29.61W	27	***	0000	071044	5-22-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3345K	41812500	142	1.5	13	-0.90	
			CAM.NAD.= 72.23N	34.79W			SWING= 321.		PHASE= 81.	EMIS.ANG.= 4.		CAM.RAD.= 5080.2 KM.				SUN AZM= 126.4			
			LAC 3 PHILOLAUS, B	W>1/2 MOON SPHERE					LAC 39 ARISTARCHU	6		LAC 15 M.HUMBOLDTIANU							

REPRODUCTION OF THE  
 ORIGINAL PAGE IS FORBIDDEN

SIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDF.	LAT		LONG		TIME-HK		M SEC		CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDF.
														ION	HULL	UM	LAT.	N	TIMES-HK	M	SEC						
N	N	MAIN						TYPE			M=N.MI	PT.	FR.	VERT													
L 4	1	158	41.99N	47.66W	28	000	0000	183333	5-22-67	LUNAR ORB HI. 610MM B&W	-	NONE	2866K	4698341	106	1.7	20	-	78								
														CAM. RAD. = 42.85N 51.22W SWING = 271. PHASE = 75. EMIS. ANG. = 4. CAM. RAD. = 4605.2 KM. SUN AZM = 107.7													
														EASTERN PART OF LAC 23 RUMKER, SHAR ; LAC 24 SINUS IRIQU ; LAC 111 WILHELM, L ; LAC 38 SELEUCUS, SCHROTER V. & LAC 39 ARISTARCH													
L 4	2	173	14.76S	75.41W	31	000	0000	053243	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2724K	34050000	116	1.3	15	-	7								
														CAM. RAD. = 14.37S 76.23W SWING = 301. PHASE = 76. EMIS. ANG. = 1. CAM. RAD. = 4463.2 KM. SUN AZM = 85.1													
														LAC 73 RICCIOLI, NE. ORIENTAL ; W>1/2 MOON SPHERE ; LAC 143 S. HAUSEN LEGENTIL ; LAC 36 PONTGEN LORE													
L 4	2	181	13.19S	82.19W	32	000	0000	173307	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2724K	34050000	26	1.9	15	-	1								
														CAM. RAD. = 14.40S 82.86W SWING = 212. PHASE = 76. EMIS. ANG. = 2. CAM. RAD. = 4463.2 KM. SUN AZM = 85.7													
														LAC 73 RICCIOLI, NE. ORIENTAL ; W>1/2 MOON SPHERE ; LAC 143 S. HAUSEN LEGENTIL ; LAC 21 N. GERARD, BOO													
L 4	2	190	70.34N	63.47W	33	000	0000	071554	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3373K	42162500	125	1.9	14	-	00								
														CAM. RAD. = 72.71N 72.45W SWING = 306. PHASE = 82. EMIS. ANG. = 6. CAM. RAD. = 5112.2 KM. SUN AZM = 129.2													
														LAC 2 ANAXIMENES ; W>1/2 MOON SPHERE ; LAC 54 BELB LAUE ; LAC 15 H. HUMBOLDTIANUM ; LAC 27 GEMINUS, ATLAS													
L 5	1	186	25.76N	43.74W	77	000	0000	023758	8-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	137K	224590	349	1.1	16	-	00								
														CAM. RAD. = 25.67N 43.72W SWING = 255. PHASE = 73. EMIS. ANG. = 1. CAM. RAD. = 1876.2 KM. SUN AZM = 96.4													
														N. W. PART OF LAC 39 ARISTARCHUS													
L 5	2	186	25.77N	43.75W	77	000	0000	023758	8-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	137K	1712500	343	1.2	16	-	00								
														CAM. RAD. = 25.68N 43.72W SWING = 249. PHASE = 73. EMIS. ANG. = 1. CAM. RAD. = 1876.2 KM. SUN AZM = 96.4													
														N. W. PART OF LAC 39 ARISTARCHUS													
L 5	1	187	26.13N	43.70W	77	000	0000	023804	8-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	138K	226230	353	1.5	14	-	0								
														CAM. RAD. = 26.32N 43.68W SWING = 258. PHASE = 73. EMIS. ANG. = 2. CAM. RAD. = 1877.2 KM. SUN AZM = 96.5													
														N. W. PART OF LAC 39 ARISTARCHUS													
L 5	2	187	26.14N	43.71W	77	000	0000	023804	8-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	138K	1725000	348	1.5	16	-	07								
														CAM. RAD. = 26.02N 43.68W SWING = 253. PHASE = 73. EMIS. ANG. = 2. CAM. RAD. = 1877.2 KM. SUN AZM = 96.5													
														N. W. PART OF LAC 39 ARISTARCHUS													
L 5	1	188	26.51N	43.66W	77	000	0000	023810	8-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	139K	227869	355	1.8	16	-	0								
														CAM. RAD. = 26.37N 43.65W SWING = 260. PHASE = 73. EMIS. ANG. = 2. CAM. RAD. = 1878.2 KM. SUN AZM = 96.6													
														N. W. PART OF LAC 39 ARISTARCHUS													
L 5	2	188	26.52N	43.67W	77	000	0000	023811	8-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	139K	1737500	351	1.9	16	-	07								
														CAM. RAD. = 26.37N 43.65W SWING = 256. PHASE = 73. EMIS. ANG. = 2. CAM. RAD. = 1878.2 KM. SUN AZM = 96.6													
														N. W. PART OF LAC 39 ARISTARCHUS													
L 5	1	189	26.84N	43.62W	77	000	0000	023817	8-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	140K	229508	357	2.2	16	-	0								
														CAM. RAD. = 26.72N 43.61W SWING = 262. PHASE = 73. EMIS. ANG. = 2. CAM. RAD. = 1879.2 KM. SUN AZM = 96.8													
														N. W. PART OF LAC 39 ARISTARCHUS													
L 5	2	189	26.84N	43.63W	77	000	0000	023817	8-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	140K	1750000	354	2.2	16	-	07								
														CAM. RAD. = 26.72N 43.61W SWING = 259. PHASE = 73. EMIS. ANG. = 2. CAM. RAD. = 1879.2 KM. SUN AZM = 96.8													
														N. W. PART OF LAC 39 ARISTARCHUS													

MIS SION	MAG #	FR. OR MAIN	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HR	GMI M SEC (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	T 1 AZ	L T ANG.	SUN SIDE, ANG. FWD. LAP R. R
L 5	1	190	27.27N	43.58W	77	***	023823	8-18-67	LUNAR	ORB HI. 610MM B&W	- NONE	141K	231148	358	2.5 16	-.8
CAM-NAD.= 27.07N 43.57W SWING= 263. PHASE= 73. EMIS-ANG.= 3.																
N. W. PART OF LAC 39 ARISTARCHUS																
L 5	2	190	27.28N	43.59W	77	***	023823	8-18-67	LUNAR	ORB LO.F=80MM B&W	- NONE	141K	1762500	355	2.6 16	-.87
CAM-NAD.= 27.07N 43.57W SWING= 260. PHASE= 73. EMIS-ANG.= 3.																
N. W. PART OF LAC 39 ARISTARCHUS																
L 5	1	191	27.66N	43.54W	77	***	023830	8-18-67	LUNAR	ORB HI. 610MM B&W	- NONE	142K	232787	359	2.9 16	-.8
CAM-NAD.= 27.42N 43.53W SWING= 264. PHASE= 73. EMIS-ANG.= 3.																
N. W. PART OF LAC 39 ARISTARCHUS																
L 5	2	191	27.67N	43.54W	77	***	023830	8-18-67	LUNAR	ORB LO.F=80MM B&W	- NONE	142K	1775000	356	2.9 16	-.87
CAM-NAD.= 27.43N 43.53W SWING= 261. PHASE= 73. EMIS-ANG.= 3.																
N. W. PART OF LAC 39 ARISTARCHUS																
L 5	1	192	28.04N	43.49W	77	***	023836	8-18-67	LUNAR	ORB HI. 610MM B&W	- NONE	143K	234426	360	3.2 16	-.8
CAM-NAD.= 27.78N 43.49W SWING= 265. PHASE= 73. EMIS-ANG.= 3.																
N. W. PART OF LAC 39 ARISTARCHUS																
L 5	2	192	28.05N	43.50W	77	***	023836	8-18-67	LUNAR	ORB LO.F=80MM B&W	- NONE	143K	1787500	357	3.3 16	-.87
CAM-NAD.= 27.78N 43.49W SWING= 262. PHASE= 73. EMIS-ANG.= 3.																
N. W. PART OF LAC 39 ARISTARCHUS																
L 5	1	193	28.43N	43.45W	77	***	023843	8-18-67	LUNAR	ORB HI. 610MM B&W	- NONE	144K	236066	1	3.6 16	-.8
CAM-NAD.= 28.14N 43.46W SWING= 265. PHASE= 73. EMIS-ANG.= 4.																
N. W. PART OF LAC 39 ARISTARCHUS																
L 5	2	193	28.44N	43.46W	77	***	023843	8-18-67	LUNAR	ORB LO.F=80MM B&W	- NONE	144K	1800000	358	3.6 16	-.87
CAM-NAD.= 28.14N 43.45W SWING= 263. PHASE= 73. EMIS-ANG.= 4.																
N. W. PART OF LAC 39 ARISTARCHUS																
L 5	1	194	22.01N	47.52W	79	***	085844	8-18-67	LUNAR	ORB HI. 610MM B&W	- NONE	127K	208197	47	1.3 16	-.00
CAM-NAD.= 21.95N 47.40W SWING= 312. PHASE= 75. EMIS-ANG.= 1.																
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	2	194	22.02N	47.53W	79	***	085844	8-18-67	LUNAR	ORB LO.F=80MM B&W	- NONE	127K	1587500	41	1.3 16	-.00
CAM-NAD.= 21.96N 47.60W SWING= 306. PHASE= 75. EMIS-ANG.= 1.																
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	1	195	22.36N	47.49W	79	***	085850	8-18-67	LUNAR	ORB HI. 610MM B&W	- NONE	128K	209836	39	1.6 16	-.8
CAM-NAD.= 22.27N 47.57W SWING= 304. PHASE= 75. EMIS-ANG.= 2.																
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	2	195	22.37N	47.50W	79	***	085850	8-18-67	LUNAR	ORB LO.F=80MM B&W	- NONE	128K	1600000	34	1.5 16	-.87
CAM-NAD.= 22.28N 47.57W SWING= 299. PHASE= 75. EMIS-ANG.= 2.																
WESTERN PART OF LAC 39 ARISTARCHUS																

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT SCALE AT		TILT		SUN SIDE
												TUDE M=N,MI K=KM.	PRIN. PT.	AZ	ANG. FR. VERT	
L 5	1	196	22.71N	47.45W	79	000	0000	085856	8-18-67	LUNAR ORB HI. 610MM B&W	- NONE	129K	211475	33	1.8 16	-.8
CAM.NAD.= 22.60N 47.54W SWING= 298. PHASE= 75. EMIS.ANG.= 2.												1868.2 KM.		SUN AZM= 95.3		
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	2	196	22.72N	47.46W	79	000	0000	085856	8-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	129K	1612500	29	1.8 16	-.87
CAM.NAD.= 22.60N 47.53W SWING= 294. PHASE= 75. EMIS.ANG.= 2.												1868.2 KM.		SUN AZM= 95.3		
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	1	197	23.06N	47.42W	79	000	0000	085902	8-18-67	LUNAR ORB HI. 610MM B&W	- NONE	130K	213115	29	2.1 16	-.8
CAM.NAD.= 22.92N 47.50W SWING= 294. PHASE= 75. EMIS.ANG.= 2.												1869.2 KM.		SUN AZM= 95.4		
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	2	197	23.07N	47.42W	79	000	0000	085902	8-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	130K	1625000	26	2.1 16	-.87
CAM.NAD.= 22.93N 47.50W SWING= 291. PHASE= 75. EMIS.ANG.= 2.												1869.2 KM.		SUN AZM= 95.4		
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	1	198	23.41N	47.38W	79	000	0000	085908	8-18-67	LUNAR ORB HI. 610MM B&W	- NONE	131K	214754	26	2.4 16	-.8
CAM.NAD.= 23.25N 47.47W SWING= 291. PHASE= 75. EMIS.ANG.= 3.												1870.2 KM.		SUN AZM= 95.5		
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	2	198	23.42N	47.39W	79	000	0000	085908	8-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	131K	1637500	23	2.4 16	-.87
CAM.NAD.= 23.26N 47.47W SWING= 288. PHASE= 75. EMIS.ANG.= 3.												1870.2 KM.		SUN AZM= 95.5		
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	1	199	23.77N	47.34W	79	000	0000	085914	8-18-67	LUNAR ORB HI. 610MM B&W	- NONE	131K	214754	24	2.8 16	-.9
CAM.NAD.= 23.58N 47.44W SWING= 289. PHASE= 75. EMIS.ANG.= 3.												1870.2 KM.		SUN AZM= 95.6		
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	2	199	23.78N	47.35W	79	000	0000	085914	8-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	131K	1637500	21	2.7 16	-.87
CAM.NAD.= 23.58N 47.43W SWING= 284. PHASE= 75. EMIS.ANG.= 3.												1870.2 KM.		SUN AZM= 95.6		
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	1	200	24.12N	47.30W	79	000	0000	085920	8-18-67	LUNAR ORB HI. 610MM B&W	- NONE	132K	216393	22	3.1 16	-.9
CAM.NAD.= 23.91N 47.40W SWING= 287. PHASE= 75. EMIS.ANG.= 3.												1871.2 KM.		SUN AZM= 95.8		
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	2	200	24.13N	47.31W	79	000	0000	085920	8-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	132K	1650000	19	3.1 16	-.87
CAM.NAD.= 23.91N 47.40W SWING= 284. PHASE= 75. EMIS.ANG.= 3.												1871.2 KM.		SUN AZM= 95.8		
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	1	201	24.48N	47.27W	79	000	0000	085926	8-18-67	LUNAR ORB HI. 610MM B&W	- NONE	133K	218033	20	3.4 16	-.9
CAM.NAD.= 24.24N 47.37W SWING= 285. PHASE= 75. EMIS.ANG.= 4.												1872.2 KM.		SUN AZM= 95.9		
WESTERN PART OF LAC 39 ARISTARCHUS																
L 5	2	201	24.49N	47.27W	79	000	0000	085926	8-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	133K	1662500	18	3.4 16	-.87
CAM.NAD.= 24.25N 47.36W SWING= 283. PHASE= 75. EMIS.ANG.= 4.												1872.2 KM.		SUN AZM= 95.9		
WESTERN PART OF LAC 39 ARISTARCHUS																

2-0

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB M	GET TIMES-HH M SEC (I=ESTIMATED)	GHT H SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=NMJ K=KM.	T I L T AZ PT. FR. VERT	SUN SIDE, ANG. ANG. FWD. LAP X, X
L 5	1	202	24.83N 49.54W	80	*** **** 121029		8-18-67	LUNAR ORB HI. 610MM B&W	NONE	134K 219672	294 6.0 15	-1.00
		CAM. RAD.=	24.64N 49.08W		SWING= 199.			PHASE= 68. EMIS. ANG.= 6.		CAM. RAD.= 1873.2 KM.	SUN AZM= 95.7	
		WESTERN PART OF LAC 39 ARISTARCHUS						6 EASTERN PART OF LAC 39 SELEUCUS, SCHROTER V.				
L 5	2	202	24.84N 49.56W	80	*** **** 121029		8-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE 134K 1675000	294 6.1 15	-1.00
		CAM. RAD.=	24.64N 49.08W		SWING= 199.			PHASE= 68. EMIS. ANG.= 7.		CAM. RAD.= 1873.2 KM.	SUN AZM= 95.7	
		WESTERN PART OF LAC 39 ARISTARCHUS						6 EASTERN PART OF LAC 39 SELEUCUS, SCHROTER V.				
L 5	1	203	25.22N 49.51W	80	*** **** 121036		8-18-67	LUNAR ORB HI. 610MM B&W	-	NONE 135K 221311	297 6.1 15	-1.2
		CAM. RAD.=	25.30N 49.04W		SWING= 202.			PHASE= 68. EMIS. ANG.= 7.		CAM. RAD.= 1874.2 KM.	SUN AZM= 95.8	
		WESTERN PART OF LAC 39 ARISTARCHUS						6 EASTERN PART OF LAC 39 SELEUCUS, SCHROTER V.				
L 5	2	203	25.23N 49.52W	80	*** **** 121036		8-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE 135K 1687500	297 6.3 15	-1.86
		CAM. RAD.=	25.61N 49.04W		SWING= 202.			PHASE= 68. EMIS. ANG.= 7.		CAM. RAD.= 1874.2 KM.	SUN AZM= 95.8	
		WESTERN PART OF LAC 39 ARISTARCHUS						6 EASTERN PART OF LAC 39 SELEUCUS, SCHROTER V.				
L 5	1	204	25.61N 49.47W	80	*** **** 121042		8-18-67	LUNAR ORB HI. 610MM B&W	-	NONE 136K 222951	300 6.3 15	-1.4
		CAM. RAD.=	25.36N 49.00W		SWING= 205.			PHASE= 68. EMIS. ANG.= 7.		CAM. RAD.= 1875.2 KM.	SUN AZM= 95.9	
		WESTERN PART OF LAC 39 ARISTARCHUS						6 EASTERN PART OF LAC 39 SELEUCUS, SCHROTER V.				
L 5	2	204	25.62N 49.48W	80	*** **** 121043		8-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE 136K 1700000	300 6.4 15	-1.87
		CAM. RAD.=	25.37N 49.00W		SWING= 205.			PHASE= 68. EMIS. ANG.= 7.		CAM. RAD.= 1875.2 KM.	SUN AZM= 95.9	
		WESTERN PART OF LAC 39 ARISTARCHUS						6 EASTERN PART OF LAC 39 SELEUCUS, SCHROTER V.				
L 5	1	205	25.49N 49.44W	80	*** **** 121049		8-18-67	LUNAR ORB HI. 610MM B&W	-	NONE 137K 214590	303 6.4 15	-1.6
		CAM. RAD.=	25.71N 48.96W		SWING= 208.			PHASE= 68. EMIS. ANG.= 7.		CAM. RAD.= 1876.2 KM.	SUN AZM= 96.1	
		WESTERN PART OF LAC 39 ARISTARCHUS						6 EASTERN PART OF LAC 39 SELEUCUS, SCHROTER V.				
L 5	2	205	25.61N 49.45W	80	*** **** 121049		8-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE 137K 1712500	303 6.6 15	-1.87
		CAM. RAD.=	25.72N 48.96W		SWING= 208.			PHASE= 68. EMIS. ANG.= 7.		CAM. RAD.= 1876.2 KM.	SUN AZM= 96.0	
		WESTERN PART OF LAC 39 ARISTARCHUS						6 EASTERN PART OF LAC 39 SELEUCUS, SCHROTER V.				

TOTAL PHOTOS IN THIS GROUP = 53

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTW=EKTAR 2.8 LENS;  
 HS6= HASSELBLAD; MAUR= MAUREN; ZP,ZB,ZS = ZEISS LENS; PLANAR, BIOGEN, SONAR; FOCAL LENGTH(MM) & MAX.F-OPENING  
 1/0 AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	HAG	FR	PHOTO	PRIN.PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	L	SUN	SIDE,	
SIGN	ROLL	OR	LA.	"	"	TIMES-HR	M SEC	"	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.		
"	"	MAIN	LONG.	"	"	(ESTIMATED)	"	"	TYPE	"	M=N.MI	PT.	FR.	LAP	"	"	"	
"	"	"	"	"	"	"	"	"	"	"	K=KM.	VERT	"	"	"	"	"	
L 4	1	114	13.46N	10.97W	21	000	0000	054938	5-19-67	LUNAR ORB HI, 610MM B&W	-	NONE	2687K	4404918	261	1.8	19	- .4
CAM-NAU.= 13.89N 8.89W SWING= 77. PHASE= 66. EMIS-ANG.= 5. CAM-RAD.= 4426.2 KM. SUN AZM= 94.2																		
LAC 58 COPERNICUS, REINHOLD ; LAC 59 M.VAPORUM, HYGINUS ; LAC 41 APENNINES, HAFNUS & LAC 40 TIMOCHARIS, L																		
L 4	1	115	42.27N	2.67W	21	000	0000	062212	5-19-67	LUNAR ORB HI, 610MM B&W	-	NONE	2905K	4762295	101	1.4	21	- .78
CAM-NAU.= 42.74N 5.70W SWING= 267. PHASE= 73. EMIS-ANG.= 4. CAM-RAD.= 4644.2 KM. SUN AZM= 109.5																		
LAC 25 CASSINI, ALP ; LAC 12 PLATO, ALPI ; LAC 13 ARISTOTE., ; LAC 40 TIMOCHARIS, LAMBERT & LAC 41 APENNINES, HAE																		
L 4	1	121	13.81N	14.80W	22	000	0000	175143	5-19-67	LUNAR ORB HI, 610MM B&W	-	NONE	2682K	4396721	268	1.3	20	- .10
CAM-NAU.= 13.87N 14.69W SWING= 83. PHASE= 67. EMIS-ANG.= 3. CAM-RAD.= 4421.2 KM. SUN AZM= 94.4																		
EASTERN PART OF LAC 58 COPERNICUS, REINHOLD ; EASTERN PART OF LAC 40 TIMOCHARIS & NORTHERN PART OF LAC 76 RIPHAeus MT.																		
L 4	1	122	42.07N	9.24W	22	000	0000	102411	5-19-67	LUNAR ORB HI, 610MM B&W	-	NONE	2895K	4745902	105	1.4	21	- .77
CAM-NAU.= 42.76N 12.27W SWING= 270. PHASE= 73. EMIS-ANG.= 4. CAM-RAD.= 4634.2 KM. SUN AZM= 109.1																		
WESTERN PART OF LAC 25 CASSINI, ALP ; LAC 24 SINUS IRIDU ; LAC 12 PLATO, ALPI ; LAC 40 TIMOCHARIS, LAMBERT & LAC 41 APENNINES																		
L 4	1	125	12.86N	23.05W	23	000	0000	055348	5-20-67	LUNAR ORB HI, 610MM B&W	-	NONE	2677K	4388525	238	1.3	20	- .36
CAM-NAU.= 13.93N 21.27W SWING= 53. PHASE= 68. EMIS-ANG.= 3. CAM-RAD.= 4416.2 KM. SUN AZM= 94.0																		
WESTERN PART OF LAC 58 COPERNICUS, REINHOLD ; CENTRAL PART OF LAC 40 TIMOCHARIS & N. W. PART OF LAC 76 RIPHAeus MT.																		
L 4	1	127	41.20N	14.29W	23	000	0000	062610	5-20-67	LUNAR ORB HI, 610MM B&W	-	NONE	2886K	4731148	114	2.2	22	- .77
CAM-NAU.= 42.80N 18.79W SWING= 278. PHASE= 74. EMIS-ANG.= 6. CAM-RAD.= 4625.2 KM. SUN AZM= 109.6																		
EASTERN PART OF LAC 24 SINUS IRID ; WESTERN PART OF LAC 25 CASSINI, ALP ; LAC 12 PLATO, ALPINE VAL. & LAC 40 TIMOCHARIS, LA																		
L 4	1	133	18.73N	29.69W	24	000	0000	175540	5-20-67	LUNAR ORB HI, 610MM B&W	-	NONE	2673K	4381947	140	3.3	19	- .46
CAM-NAU.= 13.91N 27.86W SWING= 156. PHASE= 68. EMIS-ANG.= 8. CAM-RAD.= 4412.2 KM. SUN AZM= 95.9																		
WESTERN PART OF LAC 40 TIMOCHARIS, LAMBERT ; LAC 39 ARISTARCHU & LAC 58 COPERNICUS, REINHOLD																		
L 4	2	133	18.74N	29.69W	24	000	0000	175540	5-20-67	LUNAR ORB LO, F=80MM B&W	-	NONE	2673K	33412500	340	3.3	19	- .20
CAM-NAU.= 13.91N 27.86W SWING= 156. PHASE= 68. EMIS-ANG.= 8. CAM-RAD.= 4412.2 KM. SUN AZM= 95.9																		
LAC 40 TIMOCHARIS, LAMBERT ; W1/2 MOON SPHERE ; LAC 93 M.HUMOR., GASSENDI & LAC 2 ANAXIMENES, PA																		
L 4	1	134	40.31N	18.14W	24	000	0000	182759	5-20-67	LUNAR ORB HI, 610MM B&W	-	NONE	2878K	4718033	53	3.7	21	- .26
CAM-NAU.= 42.80N 25.30W SWING= 218. PHASE= 74. EMIS-ANG.= 10. CAM-RAD.= 4617.2 KM. SUN AZM= 113.2																		
EASTERN PART OF LAC 24 SINUS IRIDU ; LAC 25 CASSINI, ALP ; LAC 12 PLATO, ALPI ; LAC 40 TIMOCHARIS, LAMBERT & LAC 3 PHILOLAUS,																		

MIS SION	NO	FR. PHOTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GMI M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. PT.	T AZ	L ANG.	T ANG.	SUN FWD.	SIDE LAP
#	#	#	LONG.	#	(ESTIMATED)					M=N.MI K=KM.			FR. VERT			
L 4	1	139	42.16N	28.25W	25	0000	062940	5-21-67 LUNAR ORB HI. 610MM B&W	- NONE	2872K	4708197	102	1.6	20	- .78	
CAM-NAD.= 42.81N 31.79W SWING= 267. PHASE= 74. EMIS-ANG.= 4.																
CENTRAL PART OF LAC 24 SINUS IRIDUM ; LAC 11 J.HERSCHEL, JURAS, BOUGUER																
CAM-RAD.= 4611.2 KM. SUN AZH=108.6																
6 LAC 12 PLATO, ALPINE VAL.																
L 4	2	156	14.87S	55.80W	28	0000	173043	5-22-67 LUNAR ORB LO.F=80MM B&W	- NONE	2722K	34025000	135	.4	17	- .00	
CAM-NAD.= 14.39S 56.29W SWING= 321. PHASE= 74. EMIS-ANG.= 1.																
LAC 74 GRIMALDI, B ; >1/2 MOON SPHERE ; LAC 136 BAILLEY, K ; LAC 22 SE. GERARD, BUNSEN, HARDING																
CAM-RAD.= 4461.2 KM. SUN AZH= 84.7																
6 LAC 40 TIMOCHARIS, LA																
L 5	2	136	15.16N	10.50W	57	0000	105517	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	108K	1350000	289	11.7	18	- .48	
CAM-NAD.= 14.92N 9.78W SWING= 195. PHASE= 60. EMIS-ANG.= 12.																
N. E. PART OF LAC 58 COPERNICUS, REINHOLD ; N. W. PART OF LAC 59 M.VAPORUM, HYGINUS																
CAM-RAD.= 1847.2 KM. SUN AZH= 93.5																
6 LAC 40 TIMOCHARIS & LAC 41 AP																
L 5	2	144	15.07N	16.19W	61	0000	233920	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	109K	1362500	83	8.5	19	- .50	
CAM-NAD.= 15.01N 16.75W SWING= 349. PHASE= 80. EMIS-ANG.= 9.																
NORTHERN PART OF LAC 58 COPERNICUS, REINHOLD																
CAM-RAD.= 1848.2 KM. SUN AZH= 93.6																
6 SOUTHERN PART OF LAC 40 TIMOCHARIS, LAMBERT																
L 5	1	145	16.30N	16.07W	61	0000	233940	8-15-67 LUNAR ORB HI. 610MM B&W	- NONE	111K	181967	76	8.9	19	- .00	
CAM-NAD.= 16.17N 16.65W SWING= 341. PHASE= 80. EMIS-ANG.= 9.																
SOUTHERN PART OF LAC 40 TIMOCHARIS, LAMBERT																
CAM-RAD.= 1850.2 KM. SUN AZH= 94.1																
L 5	2	145	16.31N	16.08W	61	0000	233940	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	111K	1387500	76	8.8	19	- .50	
CAM-NAD.= 16.18N 16.65W SWING= 341. PHASE= 80. EMIS-ANG.= 9.																
SOUTHERN PART OF LAC 40 TIMOCHARIS, LAMBERT																
CAM-RAD.= 1850.2 KM. SUN AZH= 94.1																
6 NORTHERN PART OF LAC 58 COPERNICUS, REINHOLD																
L 5	1	159	31.62N	22.16W	65	0000	122817	8-16-67 LUNAR ORB HI. 610MM B&W	- NONE	155K	254098	11	2.3	17	- .00	
CAM-NAD.= 31.62N 22.20W SWING= 276. PHASE= 73. EMIS-ANG.= 3.																
NORTHERN PART OF LAC 40 TIMOCHARIS, LAMBERT																
CAM-RAD.= 1894.2 KM. SUN AZH= 99.3																
6 S. E. PART OF LAC 24 SINUS IRIDUM																
L 5	2	159	31.63N	22.17W	65	0000	122817	8-16-67 LUNAR ORB LO.F=80MM B&W	- NONE	155K	1937500	7	2.3	17	- .00	
CAM-NAD.= 31.63N 22.20W SWING= 272. PHASE= 73. EMIS-ANG.= 3.																
NORTHERN PART OF LAC 40 TIMOCHARIS, LAMBERT																
CAM-RAD.= 1894.2 KM. SUN AZH= 99.3																
6 SOUTHERN PART OF LAC 24 SINUS IRIDUM																
L 5	1	160	32.25N	22.11W	65	0000	122824	8-16-67 LUNAR ORB HI. 610MM B&W	- NONE	156K	255738	10	2.7	17	- .8	
CAM-NAD.= 32.01N 22.16W SWING= 275. PHASE= 73. EMIS-ANG.= 3.																
S. E. PART OF LAC 24 SINUS IRIDUM																
CAM-RAD.= 1895.2 KM. SUN AZH= 99.5																
6 NORTHERN PART OF LAC 40 TIMOCHARIS, LAMBERT																
L 5	2	160	32.26N	22.12W	65	0000	122824	8-16-67 LUNAR ORB LO.F=80MM B&W	- NONE	156K	1950000	7	2.7	17	- .87	
CAM-NAD.= 32.02N 22.16W SWING= 272. PHASE= 73. EMIS-ANG.= 3.																
SOUTHERN PART OF LAC 24 SINUS IRIDUM																
CAM-RAD.= 1895.2 KM. SUN AZH= 99.5																
6 NORTHERN PART OF LAC 40 TIMOCHARIS, LAMBERT																
L 5	2	161	32.70N	22.07W	65	0000	122832	8-16-67 LUNAR ORB LO.F=80MM B&W	- NONE	158K	1975000	7	3.1	17	- .87	
CAM-NAD.= 32.42N 22.11W SWING= 272. PHASE= 73. EMIS-ANG.= 3.																
SOUTHERN PART OF LAC 24 SINUS IRIDUM																
CAM-RAD.= 1897.2 KM. SUN AZH= 99.6																
6 NORTHERN PART OF LAC 40 TIMOCHARIS, LAMBERT																
L 5	2	162	33.17N	22.02W	65	0000	122839	8-16-67 LUNAR ORB LO.F=80MM B&W	- NONE	160K	2000000	6	3.5	17	- .86	
CAM-NAD.= 32.84N 22.07W SWING= 271. PHASE= 73. EMIS-ANG.= 4.																
SOUTHERN PART OF LAC 24 SINUS IRIDUM																
CAM-RAD.= 1899.2 KM. SUN AZH= 99.8																
6 NORTHERN PART OF LAC 40 TIMOCHARIS, LAMBERT																

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LAC 40 TIMOCHARIS, LAMBERT

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MIS MAG		FR, PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	TILT	SUN SIDE			
SJUN ROLL	OR	LAT.	"	"	TIMES-HH M SEC	"	"	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
"	"	MAIN	"	"	(ESTIMATED)	"	"	TYPE	"	M=N.MI	PT.	FR.	VERT	LAP	X, Y
"	"	"	"	"	"	"	"	"	"	X=KM.	"	"	"	"	"

TOTAL PHOTOS IN THIS GROUP = 21

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), DR(U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZH,ZS = ZEISS LENS(PLANAR,BIOGEN,SONARI); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER & AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDE,
SION	KULL	UR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. FWD.
#	#	MAIN	LONG.	(I=ESTIMATED)				TYPE		M=N.MI	PT.	FR.	LAP
										K=KM.		VERT	S. X
L 4	2	92	71.17N	32.23E	17	000	065357	5-17-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3457K	43212500	129 .6 12 -.90
CAM.NAD.= 71.92N 29.48E SWING= 306. PHASE= 79. EMIS.ANG.= 2. CAM.RAD.= 5196.2 KM. SUN AZH=127.4													
LAC 4 METON,UESIT ; LAC 7 KARPINSKY ; LAC 41 APENNINES, 1 LAC 44 CLEOMEDES,M.CRIS. & LAC 18 TIKHOV													
L 4	2	116	70.85N	4.49E	21	000	070041	5-19-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3397K	42462500	148 .6 12 -.00
CAM.NAD.= 71.88N 2.48E SWING= 326. PHASE= 80. EMIS.ANG.= 2. CAM.RAD.= 5136.2 KM. SUN AZH=124.1													
LAC 3 PHILULAUS,B 1 LAC 7 KARPINSKY ; LAC 41 APENNINES, 1 LAC 1 N.POLE NEARSIDE BYRD,PFANY >80 N & LAC 17													
L 3	2	73	7.59N	6.60E	56	000	034130	2-17-67 LUNAR ORB LO.F=80MM B&W	-	NONE	63K	787500	20 52.5 7 -.00
CAM.NAD.= 4.99N 5.60E SWING= 177. PHASE= 101. EMIS.ANG.= 55. CAM.RAD.= 1802.2 KM. SUN AZH= 92.4													
EASTERN PART OF LAC 59 H.VAPORUM,HYGINUS & WESTERN PART OF LAC 40 J.CAESAR,SABINE,JANSEN													
L 4	2	84	15.18S	24.28E	16	000	170857	5-16-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2727K	34087500	124 .8 23 -.00
CAM.NAD.= 14.45S 23.18E SWING= 310. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 4466.2 KM. SUN AZH= 82.8													
LAC 78 THEOPHILUS ; >1/2 MOON SPHERE ; LAC 41 APENNINES, 1 LAC 13 ARISTOTE.,M.FRIG & LAC 113 MAUROLYCUS,R													
L 4	2	96	15.17S	18.66E	18	000	171241	5-17-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2722K	34025000	138 .6 22 -.87
CAM.NAD.= 14.45S 9.99E SWING= 324. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 4461.2 KM. SUN AZH= 83.2													
LAC 78 THEOPHILUS ; >1/2 MOON SPHERE ; LAC 41 APENNINES, 1 LAC 26 EUDOXUS,BURG & LAC 126 CLAVIUS,MAGI													
L 4	1	97	12.97N	9.66E	18	000	174328	5-17-67 LUNAR ORB HI. 610MM B&W	-	NONE	2705K	4434426	245 1.4 22 -.17
CAM.NAD.= 13.90N 11.76E SWING= 60. PHASE= 65. EMIS.ANG.= 4. CAM.RAD.= 4444.2 KM. SUN AZH= 94.7													
LAC 59 H.VAPORUM,HYGINUS ; LAC 60 J.CAESAR,SABINE,JANSEN ; LAC 42 M.SERENITY,DAWES & LAC 41 APENNINES,HA													
L 4	1	98	40.97N	18.53E	18	000	181025	5-17-67 LUNAR ORB HI. 610MM B&W	-	NONE	2938K	4816393	118 2.2 23 -.76
CAM.NAD.= 42.81N 14.21E SWING= 282. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4477.2 KM. SUN AZH=111.3													
LAC 26 EUDOXUS,BU ; CENTRAL PART OF LAC 13 ARISTOTE., ; WESTERN PART OF LAC 42 M.SERENITY,DAWES & LAC 41 APENNINES,HA													
L 4	2	101	15.17S	3.83E	19	000	051444	5-18-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2720K	34000000	150 .5 21 -.00
CAM.NAD.= 14.45S 3.38E SWING= 336. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 4459.2 KM. SUN AZH= 83.4													
LAC 77 PIOLMAEUS, ; >1/2 MOON SPHERE ; LAC 41 APENNINES, 1 LAC 93 MACNOBIUS,PROCLUS & LAC 126 CLAVIUS,MAGI													

L	4	1	102	12.96N	3.63E	19	***	****	054527	5-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	2699K	4424590	237	1.1	22	-.38	SUN SIDE.	FR.	LAP	VERT	8.8
CAM.NAD.= 13.88N 5.14E SWING= 53. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4438.2 KM. SUN AZM= 94.7																								
EASTERN PART OF LAC 59 M.VAPORUM, HYGINUS ; LAC 41 APENNINES, & N. E. PART OF LAC 77 PTOLMAEUS, KL																								
L	4	1	103	41.81N	11.28E	19	***	****	061815	5-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	2927K	4798361	107	1.7	22	-.77					
CAM.NAD.= 42.76N 7.57E SWING= 272. PHASE= 72. EMIS.ANG.= 5. CAM.RAD.= 4666.2 KM. SUN AZM= 110.7																								
WESTERN PART OF LAC 26 EUDOXUS, BUR ; LAC 25 CASSINI, ALP ; LAC 13 ARISTOTE., ; LAC 41 APENNINES, HAEMUS & LAC 42 M. SERPENT																								
L	4	1	109	13.79N	3.58W	20	***	****	174732	5-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	2693K	4414754	267	1.3	21	-.7					
CAM.NAD.= 13.89N 1.48W SWING= 82. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4432.2 KM. SUN AZM= 94.7																								
WESTERN PART OF LAC 59 M.VAPORUM, HYGINUS ; WESTERN PART OF LAC 41 APENNINES, & NORTHERN PART OF LAC 77 PTOLMAEUS, KL																								
L	4	1	110	42.59N	3.35E	20	***	****	182013	5-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	2916K	4780328	94	1.1	21	-.72					
CAM.NAD.= 42.77N 0.86E SWING= 259. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4655.2 KM. SUN AZM= 109.6																								
EASTERN PART OF LAC 25 CASSINI, ALP ; LAC 26 EUDOXUS, BUR ; LAC 12 PLATO, ALPI ; LAC 13 ARISTOTE., M. FRIG & LAC 41 APENNINES																								
L	4	2	110	42.60N	3.35E	20	***	****	182013	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2916K	36450000	94	1.1	21	-.18					
CAM.NAD.= 42.77N 0.86E SWING= 259. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4655.2 KM. SUN AZM= 109.6																								
DEGRADED NEGATIVE ; LAC 25 CASSINI, AL ; >1/2 MOON SPHERE ; LAC 1 N. POLE NEARSIDE BYRD, PFARY >80 N & LAC 79 COLOMBO, NE. M.																								
L	4	1	114	13.46N	10.97W	21	***	****	054938	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2687K	4404918	261	1.8	19	-.4					
CAM.NAD.= 13.89N 8.09W SWING= 77. PHASE= 66. EMIS.ANG.= 5. CAM.RAD.= 4426.2 KM. SUN AZM= 94.2																								
LAC 59 CUPERNICUS, REINHOLD ; LAC 59 M.VAPORUM, HYGINUS ; LAC 41 APENNINES, HAEMUS & LAC 40 TIMOCHARIS, L																								
L	4	1	115	42.27N	2.67W	21	***	****	062212	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2905K	4762295	101	1.4	21	-.78					
CAM.NAD.= 42.76N 5.70W SWING= 267. PHASE= 73. EMIS.ANG.= 4. CAM.RAD.= 644.2 KM. SUN AZM= 109.5																								
LAC 25 CASSINI, AL ; LAC 12 PLATO, ALPI ; LAC 13 ARISTOTE., ; LAC 40 TIMOCHARIS, LAMBERT & LAC 41 APENNINES, HAE																								
L	4	1	122	42.07N	9.24W	22	***	****	182411	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2895K	4745902	105	1.4	21	-.77					
CAM.NAD.= 42.76N 12.27W SWING= 270. PHASE= 73. EMIS.ANG.= 4. CAM.RAD.= 4634.2 KM. SUN AZM= 109.1																								
WESTERN PART OF LAC 25 CASSINI, ALP ; LAC 24 SINUS IRIDI ; LAC 12 PLATO, ALPI ; LAC 40 TIMOCHARIS, LAMBERT & LAC 41 APENNINES																								
L	4	2	140	71.06N	16.31W	25	***	****	070801	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3355K	41937500	117	1.2	13	-.00					
CAM.NAD.= 72.21N 22.53W SWING= 297. PHASE= 81. EMIS.ANG.= 3. CAM.RAD.= 5094.2 KM. SUN AZM= 127.7																								
LAC 3 PHILOLAUS, B ; >1/2 MOON SPHERE ; LAC 38 SELEUCUS, S ; LAC 1 N. POLE NEARSIDE BYRD, PFARY >80 N & LAC 16																								
L	4	2	143	19.29S	41.41W	26	***	****	172822	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2719K	33987500	85	1.0	19	-.8					
CAM.NAD.= 14.41S 42.98W SWING= 271. PHASE= 74. EMIS.ANG.= 3. CAM.RAD.= 4458.2 KM. SUN AZM= 84.3																								
LAC 75 LETNONNE, F ; >1/2 MOON SPHERE ; LAC 128 BIELA, MAT ; LAC 23 RUMKER, SHARP & LAC 41 APENNINES, HAE																								
L	5	1	90	20.32N	9.22E	46	***	****	235525	8-13-67	LUNAR ORB HI. 610MM B&W	-	NONE	120K	196721	282	9.1	19	-.00					
CAM.NAD.= 20.19N 9.88E SWING= 188. PHASE= 61. EMIS.ANG.= 10. CAM.RAD.= 1859.2 KM. SUN AZM= 95.8																								
S. E. PART OF LAC 41 APENNINES, HAEMUS																								

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR M SEC (ESTIMATED)	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.MI K=KM.	SCALE PRIN. PT.	TILT AZ ANG.	SUN SIDE ANG. FR. VERT	FWD. LAP K=K
L 5	2	90° 20.33N CAM.NAD.= 20.19N S. E. PART OF	9.20E 46 *** 9.88E LAC 41 APENNINES, HAEMUS	235526	8-13-67	LUNAR ORB	LO.F=80MM B&W PHASE= 61. EMIS.ANG.= 10. S. W. PART OF	- NONE CAM.RAD.= 1859.2 KM.	120K 1500000	282	9.3 19	- .00		
L 5	1	91° 20.65N CAM.NAD.= 20.50N S. E. PART OF	9.24E 46 *** 9.90E LAC 41 APENNINES, HAEMUS	235531	8-13-67	LUNAR ORB	HI. 610MM B&W PHASE= 61. EMIS.ANG.= 10.	- NONE CAM.RAD.= 1859.2 KM.	120K 196721	284	9.2 19	- .8		
L 5	2	91° 20.66N CAM.NAD.= 20.50N S. E. PART OF	9.23E 46 *** 9.90E LAC 41 APENNINES, HAEMUS	235531	8-13-67	LUNAR ORB	LO.F=80MM B&W PHASE= 61. EMIS.ANG.= 10. S. W. PART OF	- NONE CAM.RAD.= 1859.2 KM.	120K 1500000	284	9.3 19	- .87		
L 5	1	92° 20.99N CAM.NAD.= 20.81N S. E. PART OF	9.26E 46 *** 9.93E LAC 41 APENNINES, HAEMUS	235537	8-13-67	LUNAR ORB	HI. 610MM B&W PHASE= 61. EMIS.ANG.= 10. S. W. PART OF	- NONE CAM.RAD.= 1860.2 KM.	121K 198361	286	9.2 19	- .7		
L 5	2	92° 21.00N CAM.NAD.= 20.82N S. E. PART OF	9.24E 46 *** 9.93E LAC 41 APENNINES, HAEMUS	235537	8-13-67	LUNAR ORB	LO.F=80MM B&W PHASE= 61. EMIS.ANG.= 10. S. W. PART OF	- NONE CAM.RAD.= 1860.2 KM.	121K 1512500	286	9.4 19	- .87		
L 5	1	93° 21.33N CAM.NAD.= 21.13N S. E. PART OF	9.29E 46 *** 9.96E LAC 41 APENNINES, HAEMUS	235542	8-13-67	LUNAR ORB	HI. 610MM B&W PHASE= 61. EMIS.ANG.= 10. S. W. PART OF	- NONE CAM.RAD.= 1861.2 KM.	122K 200000	288	9.3 19	- .6		
L 5	2	93° 21.34N CAM.NAD.= 21.14N S. E. PART OF	9.28E 46 *** 9.96E LAC 41 APENNINES, HAEMUS	235542	8-13-67	LUNAR ORB	LO.F=80MM B&W PHASE= 61. EMIS.ANG.= 10. S. W. PART OF	- NONE CAM.RAD.= 1861.2 KM.	122K 1525000	288	9.4 19	- .87		
L 5	1	104° 23.50N CAM.NAD.= 23.46N EASTERN PART OF	2.82E 50 *** 3.18E LAC 41 APENNINES, HAEMUS	124036	8-14-67	LUNAR ORB	HI. 610MM B&W PHASE= 66. EMIS.ANG.= 5.	- NONE CAM.RAD.= 1866.2 KM.	127K 208197	278	4.5 19	- .00		
L 5	2	104° 23.51N CAM.NAD.= 23.46N EASTERN PART OF	2.81E 50 *** 3.18E LAC 41 APENNINES, HAEMUS	124036	8-14-67	LUNAR ORB	LO.F=80MM B&W PHASE= 66. EMIS.ANG.= 5.	- NONE CAM.RAD.= 1866.2 KM.	127K 1587500	278	4.7 19	- .00		
L 5	1	105° 25.09N CAM.NAD.= 24.93N EASTERN PART OF	2.95E 50 *** 3.32E LAC 41 APENNINES, HAEMUS	124103	8-14-67	LUNAR ORB	HI. 610MM B&W PHASE= 66. EMIS.ANG.= 5.	- NONE CAM.RAD.= 1870.2 KM.	131K 214754	295	4.8 19	- .00		
L 5	2	105° 25.09N CAM.NAD.= 24.93N EASTERN PART OF	2.94E 50 *** 3.32E LAC 41 APENNINES, HAEMUS	124103	8-14-67	LUNAR ORB	LO.F=80MM B&W PHASE= 66. EMIS.ANG.= 5.	- NONE CAM.RAD.= 1870.2 KM.	131K 1637500	295	5.0 19	- .45		
L 5	1	106° 26.57N CAM.NAD.= 26.30N N. E. PART OF	3.08E 50 *** 3.45E LAC 41 APENNINES, HAEMUS	124128	8-14-67	LUNAR ORB	HI. 610MM B&W PHASE= 66. EMIS.ANG.= 6.	- NONE CAM.RAD.= 1874.2 KM.	135K 221311	309	5.5 19	- .00		

STATION	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.M. K=KM.	SCALE AT		TILT AZ	SUN SIDE ANG.	SIDE ANG.	FWH LAP B. 8	
											PRIN.	PT.					
L 5	2	106	26.58N	3.08E	50	***	124128	8-14-67 LUNAR ORB LO.F=80MM B&W	-	NONE	135K	1607500	308	5.6	19	-	.50
CAM.NAD.= 26.30N 3.46E SWING= 214. PHASE= 66. EMIS.ANG.= 6. CAM.RAD.= 1874.2 KM. SUN AZM= 98.1																	
EASTERN PART OF LAC 41 APENNINES, HAEMUS																	
L 5	1	107	28.10N	3.21E	50	***	124153	8-14-67 LUNAR ORB HI. 610MM B&W	-	NONE	140K	229508	319	6.4	19	-	.00
CAM.NAD.= 27.70N 3.59E SWING= 225. PHASE= 66. EMIS.ANG.= 7. CAM.RAD.= 1879.2 KM. SUN AZM= 98.7																	
N. E. PART OF LAC 41 APENNINES, HAEMUS																	
L 5	2	107	28.11N	3.20E	50	***	124153	8-14-67 LUNAR ORB LO.F=80MM B&W	-	NONE	140K	1750000	319	6.5	19	-	.50
CAM.NAD.= 27.71N 3.59E SWING= 224. PHASE= 66. EMIS.ANG.= 7. CAM.RAD.= 1879.2 KM. SUN AZM= 98.7																	
N. E. PART OF LAC 41 APENNINES, HAEMUS																	
L 5	2	136	15.16N	10.50W	57	***	105517	8-15-67 LUNAR ORB LO.F=80MM B&W	-	NONE	108K	1350000	249	11.7	18	-	.48
CAM.NAD.= 14.92N 9.78W SWING= 195. PHASE= 60. EMIS.ANG.= 12. CAM.RAD.= 1847.2 KM. SUN AZM= 93.5																	
N. E. PART OF LAC 58 COPERNICUS, REINHOLD ; N. W. PART OF LAC 59 M. VAPORUM, HYGINUS ; LAC 40 TIMOCHARIS & LAC 41 AP																	

TOTAL PHOTOS IN THIS GROUP = 35

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT (AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAN. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREX; 2P,2B,2S = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0,0

MIS SION	MAG ROLL	FR,PHOTO OR LAT.	PRIN.PT. LONG.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE	SCALE AT PRIN.	T I AZ	L Y ANG.	SUN SIDE, ANG. FWD. FR. LAP VERT. S. R
L 4	2	77 14.42S	30.15E	15	***	050718	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2730K 34125000	141	.4 23	-.00
CAM.NAD.= 14.46S 24.77E SWING= 327. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 4469.2 KM. SUN AZM= 83.0														
DEGRADED NEGATIVE; LAC 79 COLUMBO,NE; W>1/2 MOON SPHERE; LAC 42 M.SERENITY,DAWES & LAC 78 THEOPHILUS,KA														
L 4	1	78 13.30N	30.21E	15	***	053813	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2722K 4462295	248	1.0 24	-.40
CAM.NAD.= 13.86N 31.68E SWING= 63. PHASE= 64. EMIS.ANG.= 3. CAM.RAD.= 4461.2 KM. SUN AZM= 95.4														
LAC 61 TANUNTIUS,LYELL; LAC 60 J.CAESAR,SABINE,JANSEN; LAC 43 MACHOBUS,PROCLUS & LAC 42 M.SERENITY,D														
L 4	1	79 41.83N	39.05E	15	***	061131	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2764K 4859016	103	2.1 25	-.90
CAM.NAD.= 42.79N 34.33E SWING= 268. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4703.2 KM. SUN AZM= 113.3														
LAC 27 GEMINUS,AT; LAC 26 EUDOXUS,BU; LAC 13 ARISTOTE.,; LAC 14 ENDYMION,STRABO & LAC 42 M.SERENITY,DA														
L 4	1	85 12.99N	23.94E	16	***	173950	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2717K 4454098	230	.9 24	-.31
CAM.NAD.= 13.88N 25.04E SWING= 44. PHASE= 65. EMIS.ANG.= 2. CAM.RAD.= 4456.2 KM. SUN AZM= 95.2														
EASTERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN; EASTERN PART OF LAC 42 M.SERENITY,DAWES & LAC 78 THEOPHILUS & LAC 43 KA														
L 4	1	86 41.02N	31.25E	16	***	181300	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2756K 4845902	122	1.9 24	-.66
CAM.NAD.= 42.80N 27.61E SWING= 286. PHASE= 71. EMIS.ANG.= 5. CAM.RAD.= 4695.2 KM. SUN AZM= 111.7														
LAC 26 EUDOXUS,BU; LAC 27 GEMINUS,AT; LAC 13 ARISTOTE.,; LAC 14 ENDYMION,STRABO & LAC 42 M.SERENITY,DA														
L 4	2	89 15.04S	16.90E	17	***	051044	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2724K 34050000	154	.5 22	-.00
CAM.NAD.= 14.45S 16.59E SWING= 340. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 4463.2 KM. SUN AZM= 83.2														
LAC 78 THEOPHILUS; W>1/2 MOON SPHERE; LAC 14 ENDYMION,S; LAC 42 M.SERENITY,DAWES & LAC 113 MAUDOLYCUS,R														
L 4	1	90 13.75N	15.87E	17	***	054135	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2711K 4444262	246	1.6 22	-.72
CAM.NAD.= 13.89N 18.40E SWING= 82. PHASE= 64. EMIS.ANG.= 4. CAM.RAD.= 4450.2 KM. SUN AZM= 95.0														
WESTERN PART OF LAC 60 J.CAESAR,SABINE,J I WESTERN PART OF LAC 42 M.SERENITY,DAWES & N. W. PART OF LAC 78 THEOPHILUS,KANT														
L 4	1	91 42.03N	25.73E	17	***	061439	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2947K 4831148	100	2.1 24	-.36
CAM.NAD.= 42.80N 20.90E SWING= 265. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4686.2 KM. SUN AZM= 112.5														
EASTERN PART OF LAC 26 EUDOXUS,BU; LAC 27 GEMINUS,ATL; LAC 13 ARISTOTE.,; LAC 14 ENDYMION,STRABO & LAC 42 M.SERENIT														
L 4	1	97 12.97N	4.66E	18	***	174328	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2705K 4434476	245	1.4 22	-.17
CAM.NAD.= 13.90N 11.76E SWING= 60. PHASE= 65. EMIS.ANG.= 4. CAM.RAD.= 4444.2 KM. SUN AZM= 94.7														
LAC 59 M.VAPORUM,HTGAINUS; LAC 40 J.CAESAR,SABINE,JANSEN; LAC 42 M.SERENITY,DAWES & LAC 41 APFANNINES,HA														



MIS SION	HAG ROLL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. M	UNC N	GET TIMES-HH	GHI M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE, ANG. ANG. FR. VERT	FWD. LAP 8. 8
L 4	1	98	40.97N	18.53E	18	000	0000	181625	5-17-67	LUNAR ORB HI. 610MM B&W	- NONE	2938K	4816393	118	2.2 23	-.76
CAM.NAD.= 42.81N 14.21E SWING= 282. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4677.2 KM. SUN AZM=111.3																
LAC 26 EUDOXUS, BU 1 CENTRAL PART OF LAC 13 ARISTOTE.. ; WESTERN PART OF LAC 42 M.SERENITY, DAWES ; LAC 41 APENNINES, HAE																
L 4	1	103	41.81N	11.28E	19	000	0000	061815	5-18-67	LUNAR ORB HI. 610MM B&W	- NONE	2927K	4798361	107	1.7 22	-.77
CAM.NAD.= 42.76N 7.57E SWING= 272. PHASE= 72. EMIS.ANG.= 5. CAM.RAD.= 4666.2 KM. SUN AZM=110.7																
WESTERN PART OF LAC 26 EUDOXUS, BUR ; LAC 25 CASSINI, ALP ; LAC 13 ARISTOTE.. ; LAC 41 APENNINES, HAE MUS ; LAC 42 M.SERENIT																
L 4	2	113	14.63S	9.51W	21	000	0000	051900	5-19-67	LUNAR ORB LO.F=80MM B&W	- NONE	2718K	33975000	123	.2 20	-.00
CAM.NAD.= 14.45S 9.81W SWING= 309. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4457.2 KM. SUN AZM= 83.9																
LAC 77 PTOLMAEUS, ; >1/2 MOON SPHERE ; LAC 137 NEWTON, MO ; LAC 25 CASSINI, ALPS MTS ; LAC 42 M.SERENITY, DA																
L 4	2	120	14.28S	15.64W	22	000	0000	172107	5-19-67	LUNAR ORB LO.F=80MM B&W	- NONE	2717K	33967500	77	.5 20	-.12
CAM.NAD.= 14.46S 16.43W SWING= 263. PHASE= 71. EMIS.ANG.= 1. CAM.RAD.= 4456.2 KM. SUN AZM= 84.0																
LAC 76 HIPHAEUS M ; >1/2 MOON SPHERE ; LAC 126 CLAVIUS, M ; LAC 25 CASSINI, ALPS MTS ; LAC 42 M.SERENITY, DA																
L 4	2	128	69.92N	9.43W	23	000	0000	070417	5-29-67	LUNAR ORB LO.F=80MM B&W	- NONE	3369K	42112500	171	1.0 12	-.00
CAM.NAD.= 71.90N 10.32W SWING= 347. PHASE= 80. EMIS.ANG.= 3. CAM.RAD.= 5108.2 KM. SUN AZM=122.3																
LAC 3 PHILULAUS, BARRON ; >1/2 MOON SPHERE ; LAC 58 COPEERNICUS, REINHOLD ; LAC 17																
L 4	2	164	74.20N	41.50W	29	000	0000	071247	5-23-67	LUNAR ORB LO.F=80MM B&W	- NONE	3346K	41825000	136	1.4 13	-.00
CAM.NAD.= 72.26N 47.11W SWING= 313. PHASE= 81. EMIS.ANG.= 4. CAM.RAD.= 5085.2 KM. SUN AZM=126.8																
LAC 2 ANAXIMENES, PASCAL ; >1/2 MOON SPHERE ; LAC 22 SE. GERARD, BUNSEN, ; LAC 15 M. WUHLBOLTIANUM ; LAC 42 M.SERENITY																
L 5	1	663	21.53N	29.27E	35	000	0000	125401	8-12-67	LUNAR ORB HI. 610MM B&W	- NONE	123K	201639	351	1.5 21	-.00
CAM.NAD.= 21.42N 29.29E SWING= 257. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1862.2 KM. SUN AZM= 97.1																
DEGRADED NEGATIVE ; S. E. PART OF LAC 42 M.SERENITY, DAWES ; S. E. PART OF LAC 43 MACROBIUS, PROCLUS																
L 5	2	664	21.54N	29.26E	35	000	0000	125401	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	123K	1537500	346	1.5 21	-.00
CAM.NAD.= 21.43N 29.29E SWING= 252. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1862.2 KM. SUN AZM= 97.1																
S. E. PART OF LAC 42 M.SERENITY, DAWES ; S. W. PART OF LAC 43 MACROBIUS, PROCLUS																
L 5	1	674	21.87N	29.30E	35	000	0000	125407	8-12-67	LUNAR ORB HI. 610MM B&W	- NONE	124K	203279	354	1.0 21	-.5
CAM.NAD.= 21.75N 29.32E SWING= 259. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1863.2 KM. SUN AZM= 97.3																
S. E. PART OF LAC 42 M.SERENITY, DAWES ; S. W. PART OF LAC 43 MACROBIUS, PROCLUS																
L 5	2	674	21.88N	29.29E	35	000	0000	125407	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	124K	1550000	350	1.9 21	-.87
CAM.NAD.= 21.75N 29.32E SWING= 255. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1863.2 KM. SUN AZM= 97.3																
S. E. PART OF LAC 42 M.SERENITY, DAWES ; S. W. PART OF LAC 43 MACROBIUS, PROCLUS																
L 5	1	684	22.22N	29.33E	35	000	0000	125412	8-12-67	LUNAR ORB HI. 610MM B&W	- NONE	124K	203279	355	2.1 21	-.6
CAM.NAD.= 22.07N 29.35E SWING= 261. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1863.2 KM. SUN AZM= 97.4																
S. E. PART OF LAC 42 M.SERENITY, DAWES ; S. W. PART OF LAC 43 MACROBIUS, PROCLUS																
L 5	2	684	22.23N	29.32E	35	000	0000	125412	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	125K	1562500	352	2.2 21	-.87
CAM.NAD.= 22.08N 29.35E SWING= 258. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1864.2 KM. SUN AZM= 97.4																
S. E. PART OF LAC 42 M.SERENITY, DAWES ; S. W. PART OF LAC 43 MACROBIUS, PROCLUS																

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T I L T	SUN SIDE,		
SUN ROLL	OR	LAT.	N	TIMES-HR	M	SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.		
#	#	MAIN	LONG.	(I=ESTIMATED)				TYPE		M=N,M1	PT.	FR.	LAP		
										K=KM.		VERT	%		
L 5	1	69° 22.57N	29.37E	35	000	000	125418	8-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	125K	204918	357	2.4 21	- .6
		CAM.NAD.= 22.39N	29.38E		SWING= 262.		PHASE= 68.	EMIS.ANG.= 3.	CAM.RAD.= 1664.2 KM.			SUN AZH= 97.6			
		S. E. PART OF	LAC 42 M.SERENITY,DAWES					6	S. W. PART OF	LAC 43 MACROBIUS,PROCLUS					
L 5	2	69° 22.58N	29.36E	35	000	000	125418	8-12-67 LUNAR ORB LO.F=80MM B&W	-	NONE	125K	1562500	353	2.5 21	- .87
		CAM.NAD.= 22.40N	29.38E		SWING= 259.		PHASE= 68.	EMIS.ANG.= 3.	CAM.RAD.= 1864.2 KM.			SUN AZH= 97.6			
		S. E. PART OF	LAC 42 M.SERENITY,DAWES					6	S. W. PART OF	LAC 43 MACROBIUS,PROCLUS					
L 5	1	70° 17.30N	26.33E	36	000	000	160349	8-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	113K	185246	283	11.9 20	- .00
		CAM.NAD.= 17.11N	27.13E		SWING= 189.		PHASE= 57.	EMIS.ANG.= 13.	CAM.RAD.= 1852.2 KM.			SUN AZH= 95.0			
		S. E. PART OF	LAC 42 M.SERENITY,DAWES												
L 5	2	70° 17.31N	26.32E	36	000	000	160349	8-12-67 LUNAR ORB LO.F=80MM B&W	-	NONE	113K	1412500	283	12.1 20	- .00
		CAM.NAD.= 17.11N	27.13E		SWING= 190.		PHASE= 57.	EMIS.ANG.= 13.	CAM.RAD.= 1852.2 KM.			SUN AZH= 95.0			
		S. E. PART OF	LAC 42 M.SERENITY,DAWES					6	N. E. PART OF	LAC 40 J.CAESAR,SARINE,JANSEN					
L 5	2	90° 20.33N	9.20E	46	000	000	235526	8-13-67 LUNAR ORB LO.F=80MM B&W	-	NONE	120K	1500000	282	9.3 19	- .00
		CAM.NAD.= 20.19N	9.88E		SWING= 188.		PHASE= 61.	EMIS.ANG.= 10.	CAM.RAD.= 1859.2 KM.			SUN AZH= 95.8			
		S. E. PART OF	LAC 41 APENNINES,HAEMUS					6	S. W. PART OF	LAC 42 M.SERENITY,DAWES					
L 5	2	91° 20.66N	9.23E	46	000	000	235531	8-13-67 LUNAR ORB LO.F=80MM B&W	-	NONE	120K	1500000	284	9.3 19	- .87
		CAM.NAD.= 20.50N	9.90E		SWING= 190.		PHASE= 61.	EMIS.ANG.= 10.	CAM.RAD.= 1859.2 KM.			SUN AZH= 95.9			
		S. E. PART OF	LAC 41 APENNINES,HAEMUS					6	S. W. PART OF	LAC 42 M.SERENITY,DAWES					
L 5	1	92° 20.99N	9.26E	46	000	000	235537	8-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	121K	198361	286	9.2 19	- .7
		CAM.NAD.= 20.81N	9.93E		SWING= 192.		PHASE= 61.	EMIS.ANG.= 10.	CAM.RAD.= 1860.2 KM.			SUN AZH= 96.1			
		S. E. PART OF	LAC 41 APENNINES,HAEMUS					6	S. W. PART OF	LAC 42 M.SERENITY,DAWES					
L 5	2	92° 21.00N	9.26E	46	000	000	235537	8-13-67 LUNAR ORB LO.F=80MM B&W	-	NONE	121K	1512500	286	9.4 19	- .87
		CAM.NAD.= 20.82N	9.93E		SWING= 192.		PHASE= 61.	EMIS.ANG.= 10.	CAM.RAD.= 1860.2 KM.			SUN AZH= 96.1			
		S. E. PART OF	LAC 41 APENNINES,HAEMUS					6	S. W. PART OF	LAC 42 M.SERENITY,DAWES					
L 5	1	93° 21.33N	9.29E	46	000	000	235542	8-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	122K	200000	288	9.3 19	- .6
		CAM.NAD.= 21.13N	9.96E		SWING= 194.		PHASE= 61.	EMIS.ANG.= 10.	CAM.RAD.= 1861.2 KM.			SUN AZH= 96.2			
		S. E. PART OF	LAC 41 APENNINES,HAEMUS					6	S. W. PART OF	LAC 42 M.SERENITY,DAWES					
L 5	2	93° 21.34N	9.28E	46	000	000	235542	8-13-67 LUNAR ORB LO.F=80MM B&W	-	NONE	122K	1525000	288	9.4 19	- .87
		CAM.NAD.= 21.14N	9.96E		SWING= 194.		PHASE= 61.	EMIS.ANG.= 10.	CAM.RAD.= 1861.2 KM.			SUN AZH= 96.2			
		S. E. PART OF	LAC 41 APENNINES,HAEMUS					6	S. W. PART OF	LAC 42 M.SERENITY,DAWES					

TOTAL PHOTOS IN THIS GROUP = 31

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), (ORIG) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; 2P,2B,2S = ZEISS LENS(PLANAR,BJOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN READINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG KULL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HR	GHI M SEC	H-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUD	SCALE PRIN.	AT PT.	T I L T AZ	SUN ANG.	SIDE, ANG. FWD. LAP
L 4	1	61	14.14N	49.69E	12	***	173428	5-14-67	LUNAR ORB HI. 610MM B&W	-	NONE	2734K	4481967	278	1.2	25	-49
CAM.NAD.= 13.67N 51.63E SWING= 93. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 4473.2 KM. SUN AZM= 96.2																	
LAC 61 TARONTIUS,LYELL ; LAC 62 M.UNDARUM,S.CRISIUM ; LAC 43 MACROBIUS,PROCLUS & LAC 44 CLEOMEDES,M.																	
L 4	1	62	42.37N	59.16E	12	***	180759	5-14-67	LUNAR ORB HI. 610MM B&W	-	NONE	2979K	4883607	95	2.0	25	-..
CAM.NAD.= 42.81N 54.92E SWING= 200. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 4718.2 KM. SUN AZM= 115.0																	
LAC 28 GAUSS,MESSA ; LAC 27 GEMINUS,AT ; LAC 14 ENDYMION,S ; LAC 15 M.HUMBOLDTIANUM & LAC 44 CLEOMEDES,M.C																	
L 4	1	66	13.47N	43.04E	13	***	053534	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	2731K	4477049	258	1.2	24	-33
CAM.NAD.= 13.87N 44.98E SWING= 72. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 4470.2 KM. SUN AZM= 95.7																	
CENTRAL PART OF LAC 61 TARONTIUS,LYELL ; EASTERN PART OF LAC 43 MACROBIUS, & NORTHERN PART OF LAC 79 COLOMBU,NE.M																	
L 4	1	67	41.80N	51.64E	13	***	060901	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	2976K	4878609	108	1.8	25	-..90
CAM.NAD.= 42.81N 47.79E SWING= 272. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 4715.2 KM. SUN AZM= 113.6																	
EASTERN PART OF LAC 27 GEMINUS,ATL ; LAC 28 GAUSS,MESSA ; LAC 14 ENDYMION,S ; LAC 43 MACROBIUS,PROCLUS & LAC 44 CLEOMEDES																	
L 4	2	72	15.76S	37.86E	14	***	170548	5-15-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2732K	34150000	131	1.2	24	-70
CAM.NAD.= 14.50S 36.35E SWING= 316. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4471.2 KM. SUN AZM= 82.2																	
LAC 79 COLOMBU,NE ; W>1/2 MOON SPHERE ; LAC 43 MACROBIUS, ; LAC 80 LANGRENUS,M.FERT. & LAC 114 RHEITA,JANSS																	
L 4	1	73	12.53N	37.59E	14	***	173646	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	2727K	4470492	209	.9	25	-29
CAM.NAD.= 13.82N 38.33E SWING= 23. PHASE= 64. EMIS.ANG.= 2. CAM.RAD.= 4466.2 KM. SUN AZM= 95.4																	
WESTERN PART OF LAC 61 TARONTIUS,LYELL ; CENTRAL PART OF LAC 43 MACROBIUS, & N. W. PART OF LAC 79 COLOMBU,NE.M																	
L 4	1	74	40.73N	45.57E	14	***	181008	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	2970K	4868852	119	2.3	25	-68
CAM.NAD.= 42.75N 41.06E SWING= 283. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4709.2 KM. SUN AZM= 113.2																	
CENTRAL PART OF LAC 27 GEMINUS,ATLAS ; NORTHERN PART OF LAC 43 MACROBIUS, & CENTRAL PART OF LAC 14 ENDYMION,STR																	
L 4	1	78	13.00N	30.21E	15	***	053813	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2722K	4462295	248	1.0	24	-40
CAM.NAD.= 13.86N 31.68E SWING= 63. PHASE= 64. EMIS.ANG.= 3. CAM.RAD.= 4461.2 KM. SUN AZM= 95.4																	
LAC 61 TARONTIUS,LYELL ; LAC 60 J.CAESAR,SABINE,JANSEN ; LAC 43 MACROBIUS,PROCLUS & LAC 42 M.SERENITY,D																	
L 4	1	79	41.83N	39.05E	15	***	061131	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2964K	4859016	103	2.1	25	-90
CAM.NAD.= 42.79N 34.33E SWING= 268. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4703.2 KM. SUN AZM= 113.3																	
LAC 27 GEMINUS,AT ; LAC 26 EUDOXUS,BU ; LAC 13 ARISTOTL. ; LAC 14 ENDYMION,STRABO & LAC 42 M.SERENITY,DA																	

SUN	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	SENSOR	FILM-EXPOSURE	ALTI	SCALE	AT	T	I	L	T	SUN	SIDE,
#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
L 4	1	85	12.99N	23.94E	16	***	0000	173950	5-16-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2717K	4454098	230		5	24		-.31
CAM.NAD.= 13.88N 25.04E SWING= 44. PHASE= 65. EMIS.ANG.= 2. CAM.RAD.= 4456.2 KM. SUN AZM= 95.2																					
EASTERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN ; EASTERN PART OF LAC 42 M. SERENITY, DAWES																					
L 4	1	86	41.02N	31.25E	16	***	0000	181300	5-16-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2956K	4845902	122		1.9	24		-.66
CAM.NAD.= 42.80N 27.61E SWING= 286. PHASE= 71. EMIS.ANG.= 5. CAM.RAD.= 4695.2 KM. SUN AZM= 111.7																					
LAC 26 EUDOXUS, BU ; LAC 27 GEMINUS, AT ; LAC 13 ARISTOTE., ; LAC 14 ENDYMION, STRABO																					
L 4	2	101	15.19S	3.83E	19	***	0000	051444	5-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2720K	3400000	150		5	21		-.00
CAM.NAD.= 14.45S 3.38E SWING= 336. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 4459.2 KM. SUN AZM= 83.4																					
LAC 77 PIOLMAEUS, ; >1/2 MOON SPHERE ; LAC 41 APENNINES, ; LAC 43 MACROBIUS, PROCLUS																					
L 5	2	66	21.54N	29.26E	35	***	0000	125401	8-12-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	123K	1537500	346		1.5	21		-.00
CAM.NAD.= 21.43N 29.29E SWING= 252. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1862.2 KM. SUN AZM= 97.1																					
S. E. PART OF LAC 42 M. SERENITY, DAWES																					
L 5	1	67	21.87N	29.30E	35	***	0000	125407	8-12-67	LUNAR	ORB HI. 610MM B&W	-	NONE	124K	203279	354		1.8	21		-.5
CAM.NAD.= 21.75N 29.32E SWING= 259. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1863.2 KM. SUN AZM= 97.3																					
S. E. PART OF LAC 42 M. SERENITY, DAWES																					
L 5	2	67	21.88N	29.29E	35	***	0000	125407	8-12-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	124K	1550000	350		1.9	21		-.87
CAM.NAD.= 21.75N 29.32E SWING= 255. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1863.2 KM. SUN AZM= 97.3																					
S. E. PART OF LAC 42 M. SERENITY, DAWES																					
L 5	1	68	22.22N	29.33E	35	***	0000	125412	8-12-67	LUNAR	ORB HI. 610MM B&W	-	NONE	124K	203279	355		2.1	21		-.6
CAM.NAD.= 22.07N 29.35E SWING= 261. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1863.2 KM. SUN AZM= 97.4																					
S. E. PART OF LAC 42 M. SERENITY, DAWES																					
L 5	2	68	22.23N	29.32E	35	***	0000	125412	8-12-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	125K	1562500	352		2.2	21		-.87
CAM.NAD.= 22.07N 29.35E SWING= 258. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1864.2 KM. SUN AZM= 97.4																					
S. E. PART OF LAC 42 M. SERENITY, DAWES																					
L 5	1	69	22.57N	29.37E	35	***	0000	125418	8-12-67	LUNAR	ORB HI. 610MM B&W	-	NONE	125K	204918	357		2.4	21		-.6
CAM.NAD.= 22.39N 29.38E SWING= 262. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 1864.2 KM. SUN AZM= 97.4																					
S. E. PART OF LAC 42 M. SERENITY, DAWES																					
L 5	2	69	22.58N	29.36E	35	***	0000	125418	8-12-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	125K	1562500	353		2.5	21		-.87
CAM.NAD.= 22.40N 29.38E SWING= 259. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 1864.2 KM. SUN AZM= 97.6																					
S. E. PART OF LAC 42 M. SERENITY, DAWES																					

TOTAL PHOTOS IN THIS GROUP = 19

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: . = DEGRADED PHOTOS, \$ = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO ~ = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EXTR=EXTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREN; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

L	4	Z	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN SIDE,	
																			SION KOLL
#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	
L 4	2	92	71.17N	32.23E	17	***	****	065357	5-17-67	LUNAR	ORB	LO.F=80MM B&W	-	NONE	3457K	43212500	129	.6 12	-.90
CAM.NAD.= 71.92N 29.48E SWING= 306. PHASE= 79. EMIS.ANG.= 2. CAM.RAD.= 5196.2 KM. SUN AZM=127.4																			
LAC 4 MEUN, DESIT; LAC 7 KARPINSKY; LAC 41 APENNINES; LAC 44 CLEOMEDES, M. CRIS. & LAC 18 TIKHOV																			
L 4	1	405	13.28N	70.20E	9	***	****	053159	5-13-67	LUNAR	ORB	HI. 610MM B&W	-	NONE	2740K	4491803	245	.9 27	-.38
CAM.NAD.= 13.90N 71.57E SWING= 59. PHASE= 61. EMIS.ANG.= 2. CAM.RAD.= 4479.2 KM. SUN AZM= 96.4																			
DEGRADED NEGATIVE; LAC 63 NEPER, SCHUBERT, N. SMYTH; LAC 62 M. UNDAUM, S. CRISIUM & LAC 45 PLUTARCH, HAH																			
L 4	1	470	13.32N	62.36E	10	***	****	173242	5-13-67	LUNAR	ORB	HI. 610MM B&W	-	NONE	2738K	4488525	257	1.6 25	-.2
CAM.NAD.= 13.88N 64.93E SWING= 71. PHASE= 61. EMIS.ANG.= 4. CAM.RAD.= 4477.2 KM. SUN AZM= 95.9																			
CENTRAL PART OF LAC 62 M. UNDAUM, S. CRISIUM; EASTERN PART OF LAC 44 CLEOMEDES, & LAC 80 LANGRENUS, M. FERT.																			
L 4	1	480	41.21N	71.77E	10	***	****	180618	5-13-67	LUNAR	ORB	HI. 610MM B&W	-	NONE	2983K	4890164	118	1.9 26	-.00
CAM.NAD.= 42.84N 67.95E SWING= 232. PHASE= 69. EMIS.ANG.= 5. CAM.RAD.= 4722.2 KM. SUN AZM=114.8																			
LAC 28 GAUSS, HESS; LAC 15 M. HUMBOLDT; LAC 44 CLEOMEDES; LAC 45 PLUTARCH, HAHN & LAC 29 BRUNO FABRY																			
L 4	2	535	14.81S	56.82E	11	***	****	050229	5-14-67	LUNAR	ORB	LO.F=80MM B&W	-	NONE	2740K	34250000	122	.5 25	-.56
CAM.NAD.= 14.41S 56.14E SWING= 338. PHASE= 66. EMIS.ANG.= 1. CAM.RAD.= 4479.2 KM. SUN AZM= 82.4																			
DEGRADED NEGATIVE; LAC 80 LANGRENUS; LAC 44 CLEOMEDES; LAC 128 AIELA, WATT & LAC 64 NE. SMYTH; HE																			
L 4	1	54	13.59N	56.70E	11	***	****	053333	5-14-67	LUNAR	ORB	HI. 610MM B&W	-	NONE	2737K	4486885	259	1.0 26	-.36
CAM.NAD.= 13.89N 58.29E SWING= 74. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 4476.2 KM. SUN AZM= 96.2																			
WESTERN PART OF LAC 62 M. UNDAUM, S. CRISIUM; CENTRAL PART OF LAC 44 CLEOMEDES, & N. W. PART OF LAC 80 LANGRENUS, M.																			
L 4	1	55	42.07N	65.57E	11	***	****	060707	5-14-67	LUNAR	ORB	HI. 610MM B&W	-	NONE	2982K	4888525	102	1.9 26	-.90
CAM.NAD.= 42.84N 61.25E SWING= 266. PHASE= 69. EMIS.ANG.= 5. CAM.RAD.= 4721.2 KM. SUN AZM=115.1																			
LAC 28 GAUSS, HESS; NORTHERN PART OF LAC 44 CLEOMEDES; N. E. PART OF LAC 14 ENDYMION, STRABO & LAC 15 M. HUMBOLDTIANU																			
L 4	2	600	13.58S	48.79E	12	***	****	170326	5-14-67	LUNAR	ORB	LO.F=80MM B&W	-	NONE	2738K	34225000	319	.7 23	-.90
CAM.NAD.= 14.43S 49.54E SWING= 145. PHASE= 66. EMIS.ANG.= 2. CAM.RAD.= 4477.2 KM. SUN AZM= 83.6																			
LAC 79 COLUMBUS, NE; W>1/2 MOON SPHERE; LAC 27 GEMINUS, AT; LAC 44 CLEOMEDES, M. CRIS. & LAC 114 RHEITA, JANSS																			
L 4	1	61	14.14N	49.69E	12	***	****	173428	5-14-67	LUNAR	ORB	HI. 610MM B&W	-	NONE	2734K	4481967	278	1.2 25	-.49
CAM.NAD.= 13.87N 51.63E SWING= 93. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 4473.2 KM. SUN AZM= 96.2																			
LAC 61 TARANTULUS, LYLEL; LAC 62 M. UNDAUM, S. CRISIUM; LAC 43 MACHORIUS, PROCLUS & LAC 44 CLEOMEDES, M.																			

## LAC 44 CLEOMEDES, M. CRIS.

MIS SION	MAG ROLL	FR. PHOTO OR LAT.	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR M SEC (ESTIMATED)	GMT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE TUBE	SCALE AT PRIN. PT. M=H.MI K=KM.	Y I L T AZ ANG. FWD. FR. LAP VERT S. R	SUN SIDE
L 4	1	62	42.37N	59.16E	12 *** **** 180759	5-14-67	LUNAR ORB HI. 610MM B&W	-	NONE 2979K	48836N7	95	2.0 25 -...
CAM. NAD. = 42.81N 54.52E SWING = 260. PHASE = 70. EMIS. ANG. = 5. CAM. RAD. = 4718.2 KM. SUN AZM = 115.0												
LAC 28 GAUSS, MESS; LAC 27 GEMINUS, ATL; LAC 14 ENDYMION, S; LAC 15 M. HUMBOLDTIANUM & LAC 44 CLEOMEDES, M.C												
L 4	1	67	41.80N	51.64E	13 *** **** 060901	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE 2976K	48786N7	108	1.8 25 -.90
CAM. NAD. = 42.81N 47.79E SWING = 272. PHASE = 70. EMIS. ANG. = 5. CAM. RAD. = 4715.2 KM. SUN AZM = 113.6												
EASTERN PART OF LAC 27 GEMINUS, ATL; LAC 28 GAUSS, MESSA; LAC 14 ENDYMION, S; LAC 43 MACROBIUS, PROCLUS & LAC 44 CLEOMEDES												
L 4	2	73	12.54N	37.59E	14 *** **** 173646	5-15-67	LUNAR ORB LO. F=80MM B&W	-	NONE 2727K	34087500	209	.9 25 -...
CAM. NAD. = 13.82N 38.33E SWING = 23. PHASE = 64. EMIS. ANG. = 2. CAM. RAD. = 4466.2 KM. SUN AZM = 95.4												
DEGRADED NEGATIVE; LAC 61 TARUNTIUS, LYELL; >1/2 MOON SPHERE & LAC 114 RHEITA, JANS												
L 4	2	86	41.02N	31.24E	16 *** **** 181300	5-16-67	LUNAR ORB LO. F=80MM B&W	-	NONE 2956K	36950000	172	1.9 24 -.90
CAM. NAD. = 42.80N 27.61E SWING = 286. PHASE = 71. EMIS. ANG. = 5. CAM. RAD. = 4695.2 KM. SUN AZM = 111.7												
LAC 26 EUDOXUS, BU; >1/2 MOON SPHERE; LAC 16; LAC 5 PETERMANN, HAYN & LAC 44 CLEOMEDES, M.C												
L 4	2	98	40.97N	18.53E	18 *** **** 181626	5-17-67	LUNAR ORB LO. F=80MM B&W	-	NONE 2938K	36725000	118	2.2 23 -.27
CAM. NAD. = 42.81N 14.21E SWING = 282. PHASE = 72. EMIS. ANG. = 6. CAM. RAD. = 4444.2 KM. SUN AZM = 111.3												
LAC 26 EUDOXUS, BU; >1/2 MOON SPHERE; LAC 44 CLEOMEDES, M.C; LAC 78 THEOPHILUS, KANT & LAC 1 N. POLE NEARSID												
L 4	1	177	38.81N	67.86E	31 *** **** 094528	5-24-67	LUNAR ORB HI. 610MM B&W	-	NONE 5492K	9003279	290	7.6 15 -...
CAM. NAD. = 33.96N 49.33E SWING = 282. PHASE = 108. EMIS. ANG. = 33. CAM. RAD. = 7231.2 KM. SUN AZM = 258.7												
LAC 28 GAUSS, MESS; >1/4 MOONS SPHERE; LAC 3 PHILOLAUS, B; LAC 4 METON, DESITTER & LAC 44 CLEOMEDES, M.C												
L 4	2	184	35.18S	69.32E	33 *** **** 013032	5-25-67	LUNAR ORB LO. F=80MM B&W	-	NONE 5790K	72374999	259	6.6 7 -...
CAM. NAD. = 34.03S 97.52E SWING = 269. PHASE = 113. EMIS. ANG. = 30. CAM. RAD. = 7529.2 KM. SUN AZM = 275.8												
LAC 115 FURNERIUS; >1/2 MOON SPHERE; LAC 114 RHEITA, JA; LAC 61 TARUNTIUS, LYELL & LAC 44 CLEOMEDES, M.C												
L 4	2	185	35.27S	69.30E	33 *** **** 013036	5-25-67	LUNAR ORB LO. F=80MM B&W	-	NONE 5790K	72374999	258	6.6 7 -...
CAM. NAD. = 34.03S 97.52E SWING = 269. PHASE = 113. EMIS. ANG. = 30. CAM. RAD. = 7529.2 KM. SUN AZM = 275.9												
LAC 115 FURNERIUS; >1/2 MOON SPHERE; LAC 114 RHEITA, JA; LAC 44 CLEOMEDES, M. CRIS. & LAC 129 M. AUSTRAL, L												

TOTAL PHOTOS IN THIS GROUP = 17

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZINUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO @ = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURENT; 2P, 2B, 25 = ZEISS LENS(PLANAR, BIOGEN, SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR, PHOTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GMT M SEC	M=DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TIDE	SCALE AT PRIN. M=N.MI K=KM.	T I L T AZ	SUN SIDE ANG. FR.	SIDE ANG. VERT	FWD. LAP R. R
L 4	1	17	14.24N 90.44E	6	***	****	172957	5-11-67 LUNAR ORB HI. 610MM B&W	-	NONE	2739K	4490164	290	.7 29	-.43
		CAM.NAD.= 13.89N 91.45E		SWING= 104.		PHASE= 60.		EMIS.ANG.= 2.		CAM.RAD.= 4478.2 KM.		SUN AZM= 97.5			
		LAC 64 NE.SMYTHII HERTZ				; LAC 46 JOLIOT MAXWELL						; LAC 63 NEPER, SCHUBERT, N. SMYTHI & LAC 45 PLUTARCH, HAH			
L 4	1	18	14.63N 90.47E	6	***	****	173007	5-11-67 LUNAR ORB HI. 610MM B&W	-	NONE	2740K	4491803	301	.7 28	-.90
		CAM.NAD.= 14.04N 91.46E		SWING= 116.		PHASE= 60.		EMIS.ANG.= 2.		CAM.RAD.= 4479.2 KM.		SUN AZM= 97.7			
		LAC 64 NE.SMYTHII HERTZ				; LAC 46 JOLIOT MAXWELL						; LAC 63 NEPER, SCHUBERT, N. SMYTHI & LAC 45 PLUTARCH, HAH			
L 4	1	20	15.42N 90.54E	6	***	****	173027	5-11-67 LUNAR ORB HI. 610MM B&W	-	NONE	2741K	4493443	319	.9 28	-.90
		CAM.NAD.= 14.34N 91.49E		SWING= 134.		PHASE= 60.		EMIS.ANG.= 2.		CAM.RAD.= 4480.2 KM.		SUN AZM= 98.2			
		LAC 64 NE.SMYTHII ; LAC 46 JOLIOT MAXWELL										; LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 45 PLUTARCH, H & LAC 82 SE.M. SMYTH			
L 4	1	28	13.34N 81.88E	7	***	****	053040	5-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	2740K	4491803	258	1.9 26	-.15
		CAM.NAD.= 13.94N 84.83E		SWING= 73.		PHASE= 59.		EMIS.ANG.= 5.		CAM.RAD.= 4479.2 KM.		SUN AZM= 96.3			
		CENTRAL PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI										; EASTERN PART OF LAC 45 PLUTARCH, H & LAC 81 ANSGARIUS, N. M. SMYTHI			
L 4	1	35	13.63N 76.71E	8	***	****	173116	5-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	2740K	4491803	260	.9 27	-.35
		CAM.NAD.= 13.88N 78.20E		SWING= 74.		PHASE= 61.		EMIS.ANG.= 2.		CAM.RAD.= 4479.2 KM.		SUN AZM= 96.7			
		DEGRADED NEGATIVE ; LAC 63 NEPER, SCHUBERT, N;										WESTERN PART OF LAC 45 PLUTARCH, HAH & N. W. PART OF LAC 81 ANSGARIUS, W			
L 4	1	36	41.65N 85.89E	8	***	****	180452	5-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	2982K	4888525	107	2.1 27	-.90
		CAM.NAD.= 42.83N 81.30E		SWING= 271.		PHASE= 68.		EMIS.ANG.= 6.		CAM.RAD.= 4721.2 KM.		SUN AZM= 116.6			
		LAC 29 BRUNO FABRY ; NORTHERN PART OF LAC 45 PLUTARCH, H ; EASTERN PART OF LAC 15 M. HUMBOLDTIANUM										& LAC 16			
L 4	1	40	13.28N 70.20E	9	***	****	053159	5-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2740K	4491803	245	.9 27	-.38
		CAM.NAD.= 13.90N 71.57E		SWING= 59.		PHASE= 61.		EMIS.ANG.= 2.		CAM.RAD.= 4479.2 KM.		SUN AZM= 96.4			
		DEGRADED NEGATIVE ; LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 62 M. UNDAARUM, S. CRISTUM										& LAC 45 PLUTARCH, HAH			
L 4	1	41	41.26N 80.11E	9	***	****	060535	5-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2984K	4891803	109	2.5 28	-.90
		CAM.NAD.= 42.85N 79.64E		SWING= 273.		PHASE= 69.		EMIS.ANG.= 7.		CAM.RAD.= 4723.2 KM.		SUN AZM= 116.7			
		DEGRADED NEGATIVE ; LAC 28 GAUSS, MESSALA, ZEN ; LAC 29 BRUNO FABRY										& EASTERN PART OF LAC 15 M. HUMBOLDTIANUM			
L 4	1	48	41.21N 71.77E	10	***	****	180618	5-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2983K	4890164	118	1.9 26	-.00
		CAM.NAD.= 42.84N 67.95E		SWING= 282.		PHASE= 69.		EMIS.ANG.= 5.		CAM.RAD.= 4722.2 KM.		SUN AZM= 114.8			
		LAC 28 GAUSS, MESS ; LAC 15 M. HUMBOLDT ; LAC 44 CLEMEDES ; LAC 45 PLUTARCH, HAHN										& LAC 29 BRUNO FABRY			

MIS MAG		FR, PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YH	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE.				
SION ROLL	OR	LAT.	#	TIMES-HR M SEC	SENSOR			TYPE	AND FILTER	TUOE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	HAIRN	LONG.	(I=ESTIMATED)						M=N.MI	PT.	FR.	VERT	LAP	R=8	
L 4 1	177	38.81N	07.86E	31 ***	094528	5-24-67	LUNAR ORB HI.	610MM B6W	-	NONE	5492K	9003279	290	7.6	15	-.00
		CAM. RAD. = 33.96N 99.33E		SWING = 282.		PHASE = 108.		EMIS. ANG. = 33.		CAM. RAD. =		7231.2 KH.		SUN AZM = 258.7		
		LAC 28 GAUSS, MESS 1		W 1/4 MOON SPHERE		LAC 3 PHILOLAUS, H		LAC 4 METON, DESJITTER				6		LAC 44 CLEONE FS, H.C		
L 4 2	178	33.88S	02.20E	32 ***	132933	5-24-67	LUNAR ORB LO.	F=80MM B6W	-	NONE	5796K	72449999	264	5.3	2	-.00
		CAM. RAD. = 33.98S 104.14E		SWING = 275.		PHASE = 112.		EMIS. ANG. = 23.		CAM. RAD. =		7535.2 KH.		SUN AZM = 271.9		
		LAC 116 M. AUSTRAL, JENNER		; > 1/2 MOON SPHERE		LAC 97 FRACASTOR, US, HE		LAC 131 PRANDTL PLANK		6		LAC 45 PLUTARCH, H				

TOTAL PHOTOS IN THIS GROUP = 11



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (0), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; 2P, 2B, 2S = ZEISS LENS(PLANAR, BIOGEN, SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS;  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NFG. AT PP IF ALT NOT 0.0

MIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN SIDE,
SIGN	HULL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.		AZ	ANG. ANG. FWD.
#	#	MAIN	LONG.		(ESTIMATED)			TYPE		M=N.MI	PT.		FR.	LAP
										K=KM.			VERT	X, X
L 4	1	17 14.24N	90.44E	6 ***	172957		5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2739K	4490144	290	.7 29 -.43
		CAM.RAD.= 13.89N	91.45E		SWING= 104.			PHASE= 60.	EMIS.ANG.= 2.	CAM.RAD.= 4478.2 KM.			SUN AZM= 97.5	
		LAC 64 NE.SMYTHI	HERTZ					LAC 46 JOLIOT MAXWELL					LAC 63 NEPER, SCHUBERT, N.SMYTHI & LAC 45 PLUTARCH, MAH	
L 4	1	18 14.63N	90.47E	6 ***	173007		5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2740K	4491803	301	.7 28 -.90
		CAM.RAD.= 14.04N	91.46E		SWING= 116.			PHASE= 60.	EMIS.ANG.= 2.	CAM.RAD.= 4479.2 KM.			SUN AZM= 97.7	
		LAC 64 NE.SMYTHI	HERTZ					LAC 46 JOLIOT MAXWELL					LAC 63 NEPER, SCHUBERT, N.SMYTHI & LAC 45 PLUTARCH, MAH	
L 4	1	20 15.42N	90.54E	6 ***	173027		5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2741K	4493443	319	.9 28 -.90
		CAM.RAD.= 14.34N	91.49E		SWING= 134.			PHASE= 60.	EMIS.ANG.= 2.	CAM.RAD.= 4480.2 KM.			SUN AZM= 98.2	
		LAC 64 NE.SMYTHI						LAC 46 JOLIOT MAXWELL					LAC 63 NEPER, SCHUBERT, N.SMYTHI ; LAC 45 PLUTARCH, MAH & LAC 82 SE.M.SMYTH	
L 5	2	181 41.96N	109.41E	74 ***	175642		8-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1181K	14762500	279	23.4 11 -.00
		CAM.RAD.= 41.61N	134.27E		SWING= 90.			PHASE= 121.	EMIS.ANG.= 42.	CAM.RAD.= 2920.2 KM.			SUN AZM= 261.6	
		LAC 30 E.SZILARD						W1/4 MOONS SPHERE ; LAC 47 OLCOTT ; LAC 16					6 LAC 29 BRUNO FABRY	

TOTAL PHOTOS IN THIS GROUP = 4

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (1-), (10-), (100-), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREN; 2P, 2B, 2S = ZEISS LENS(PLANAR, BIOGEN, SONAR); FOCAL LENGTH(MM) & MAX.F. OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB N	GET TIMES-HR (I=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TIDE	SCALE AT PRIN. M=N.M K=KM.	TILT AZ PT.	SUN SIDE ANG. FR. VERT	FWO. LAP S. B
L 4	1	146*	2.79N 136.09E	26	***	233025	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	6148K 100786RB	25	.8 **	-.00
CAM.NAD.= .16N 134.86E SWING= 45. PHASE= 109. EMIS.ANG.= 4.														
LAC 66 MENDELEEV : W 1/4 MOON SPHERE ; LAC 30 E.SZILARD : LAC 47 OLCOTT														
L 4	1	147*	2.09N 136.14E	26	***	233057	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	6149K 10080328	31	.7 **	-.90
CAM.NAD.= .00N 134.87E SWING= 51. PHASE= 109. EMIS.ANG.= 3.														
LAC 66 MENDELEEV : >1/2 MOON SPHERE ; LAC 30 E.SZILARD : LAC 47 OLCOTT														
L 5	1	158	37.83N 126.77E	64	***	101006	8-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	1233K 2021311	278	24.2 11	-.00
CAM.NAD.= 37.69N 152.57E SWING= 89. PHASE= 124. EMIS.ANG.= 44.														
EASTERN PART OF LAC 30 E.SZILARD WELLS : 1 NORTHERN PART OF LAC 47 OLCOTT														
L 5	1	163	38.04N 121.22E	67	***	194258	8-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	1231K 2018033	279	24.4 12	-.00
CAM.NAD.= 37.62N 147.19E SWING= 89. PHASE= 123. EMIS.ANG.= 45.														
CENTRAL PART OF LAC 30 E.SZILARD WELLS : 6 NORTHERN PART OF LAC 47 OLCOTT														
L 5	2	181	41.96N 109.41E	74	***	175642	8-17-67	LUNAR ORB LO.F=800MM B&W	-	NONE	1181K 14762500	279	23.4 11	-.00
CAM.NAD.= 41.01N 134.27E SWING= 90. PHASE= 121. EMIS.ANG.= 42.														
LAC 30 E.SZILARD : W 1/4 MOON SPHERE ; LAC 47 OLCOTT : LAC 16														

TOTAL PHOTOS IN THIS GROUP = 5

6 LAC 29 BRUND FABRY

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG#, H=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTRAR 2.8 LENS;  
 HSB=HASSELBLADI MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIDGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT D.O

HIS SION	MAG ROLL	FR, OR	PHOTO LAT.	PRIN. LUNG.	PT. #	ORB #	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TIDE	SCALE PRIN.	AT PT.	TILT AZ	SUN ANG.	SIDE ANG.	FWD. LAP
#	#	#	#	#	#	#	(ESTIMATED)					M=MM K=KM.				FR. VERT		
L 1	2	115	2.925	145.26E	69	000	000555	8-25-66	LUNAR ORB LO.F=80MM B&W	-	NONE	1381K	17262500	10	6.8	19	-.	..
CAM.NAD.= 8.27S 144.23E SWING= 4. PHASE= 70. EMIS.ANG.= 12. CAM.RAD.= 3120.2 KM. SUN AZM=272.6																		
LAC 84 DELLINGER ; LAC 66 MENDELEEV ; LAC 48 W.M.MOSCOV ; LAC 85 KEELER & LAC 67 SPENCER																		
L 4	1	1233	1.13N	162.38E	22	000	232754	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	6151K	10083607	44	.4	00	-.	..
CAM.NAD.= .80 161.26E SWING= 64. PHASE= 111. EMIS.ANG.= 2. CAM.RAD.= 7890.2 KM. SUN AZM=271.1																		
DEGRADED NEGATIVE ; LAC 67 SPENCER ; LAC 31 WIENER & LAC 48 W.M.MOSCOVIENSE																		
L 5	1	103	38.72N	150.81E	49	000	102451	8-14-67	LUNAR ORB HI. 610MM B&W	-	NONE	1237K	2027869	280	25.4	11	-.	..
CAM.NAD.= 37.85N 178.75E SWING= 90. PHASE= 126. EMIS.ANG.= 47. CAM.RAD.= 2976.2 KM. SUN AZM=262.9																		
EASTERN PART OF LAC 31 WIENER ; N. E. PART OF LAC 48 W.M.MOSCOV & N. W. PART OF LAC 49 E.M.MOSCOVIE																		
L 5	1	124	38.97N	142.78E	54	000	022004	8-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	1237K	2027869	281	25.0	11	-.	..
CAM.NAD.= 37.83N 170.09E SWING= 91. PHASE= 125. EMIS.ANG.= 46. CAM.RAD.= 2976.2 KM. SUN AZM=262.9																		
CENTRAL PART OF LAC 31 WIENER & NORTHERN PART OF LAC 48 W.M.MOSCOVIENSE																		
L 5	1	158	37.83N	126.77E	64	000	101006	3-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	1233K	2021311	278	24.2	11	-.	..
CAM.NAD.= 37.69N 152.57E SWING= 89. PHASE= 124. EMIS.ANG.= 44. CAM.RAD.= 2972.2 KM. SUN AZM=263.2																		
EASTERN PART OF LAC 30 E.SZILARD WELLS ; NORTHERN PART OF LAC 47 OLCOTT & N. W. PART OF LAC 48 W.M.MOSCOVIE																		
L 5	2	158	37.94N	126.79E	64	000	101006	8-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1233K	15412500	278	24.2	11	-.	..
CAM.NAD.= 37.69N 152.57E SWING= 90. PHASE= 124. EMIS.ANG.= 44. CAM.RAD.= 2972.2 KM. SUN AZM=263.2																		
LAC 30 E.SZILARD ; 1/4 MOONS SPHERE ; LAC 31 WIENER ; LAC 17 & LAC 48 W.M.MOSCOVIEN																		
L 5	2	163	38.16N	121.24E	67	000	194259	8-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1231K	15387500	279	24.3	11	-.	..
CAM.NAD.= 37.62N 147.19E SWING= 90. PHASE= 123. EMIS.ANG.= 45. CAM.RAD.= 2970.2 KM. SUN AZM=262.7																		
LAC 30 E.SZILARD ; 1/4 MOONS SPHERE ; LAC 31 WIENER ; LAC 17 & LAC 48 W.M.MOSCOVIEN																		

TOTAL PHOTOS IN THIS GROUP = 7

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. \$ = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (J) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTRAEKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUH= MAUREK; 2P, 2B, 2S = ZEISS LENS (PLANAR, BIOGEN, SONAR); FOCAL LENGTH (MM); G. MAX. F. OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

SUN	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT!	SCALE AT	T I L T	SUN	SIDE.	
ROLL							TIMES-HH M SEC			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	FWD.	
#	#	MAIN			LONG.		(I=ESTIMATED)			TYPE		M=N.MI	PT.	FR.	ANG.	LAP	
												K=KM.		VERT		%.	
L 1	2	115	2.925	145.26E	69	***	000555	8-25-66	LUNAR ORB	LO.F=80MM B6W	-	NONE	1381K	17262500	10	6.9 19	-.00
			CAM.NAD.=	8.275	144.23E		SWING=	9.	PHASE=	70.	EMIS.ANG.=	12.	CAM.RAD.=	3120.2 KM.		SUN AZM=272.6	
			LAC 64 UELLINGER	1	LAC 66 HENDELEEV			LAC 48 W.M.MOSCOV		LAC 85 KEELER						LAC 67 SPENCER	
L 4	1	993	3.51N	179.92E	18	***	232421	5-17-67	LUNAR ORB	HI. 610MM B6W	-	NONE	6142K	10068852	293	2.4 **	-.00
			CAM.NAD.=	.11N	172.38W		SWING=	294.	PHASE=	115.	EMIS.ANG.=	11.	CAM.RAD.=	7881.2 KM.		SUN AZM=271.5	
			DEGRADED NEGATIVE		LAC 68 SHARONOV			1/4 MOONS SPHERE		LAC 32 HUTTON						LAC 49 E.M.MOSCOVIEN	
L 5	1	79	38.66N	167.55E	39	***	023432	8-13-67	LUNAR ORB	HI. 610MM B6W	-	NONE	1245K	2040984	281	25.8 11	-.00
			CAM.NAD.=	37.73N	163.64W		SWING=	89.	PHASE=	128.	EMIS.ANG.=	48.	CAM.RAD.=	2984.2 KM.		SUN AZM=263.3	
			CENTRAL PART OF		LAC 32 HUTTON					N. E. PART OF		LAC 49 E.M.MOSCOV				LAC 50 MORSE	
L 5	1	85	38.73N	158.84E	44	***	182940	8-13-67	LUNAR ORB	HI. 610MM B6W	-	NONE	1239K	2031148	281	25.8 11	-.00
			CAM.NAD.=	37.81N	172.42W		SWING=	89.	PHASE=	127.	EMIS.ANG.=	48.	CAM.RAD.=	2978.2 KM.		SUN AZM=262.9	
			WESTERN PART OF		LAC 32 HUTTON					EASTERN PART OF		LAC 31 WIENER				LAC 49 E.M.MOSCOVIE	
L 5	2	85	38.85N	158.87E	44	***	182940	8-13-67	LUNAR ORB	LO.F=80MM B6W	-	NONE	1239K	15487500	281	25.8 11	-.00
			CAM.NAD.=	37.80N	172.42W		SWING=	90.	PHASE=	127.	EMIS.ANG.=	48.	CAM.RAD.=	2978.2 KM.		SUN AZM=262.9	
			LAC 32 HUTTON		1/4 MOONS SPHERE			LAC 18 TIKHOV		LAC 50 MORSE						LAC 17	
L 5	1	103	38.72N	150.81E	49	***	102451	8-14-67	LUNAR ORB	HI. 610MM B6W	-	NONE	1237K	2027869	280	25.4 11	-.00
			CAM.NAD.=	37.85N	178.75E		SWING=	90.	PHASE=	126.	EMIS.ANG.=	47.	CAM.RAD.=	2976.2 KM.		SUN AZM=262.9	
			EASTERN PART OF		LAC 31 WIENER					N. E. PART OF		LAC 48 W.M.MOSCOV				LAC 49 E.M.MOSCOVIE	
L 5	2	103	38.84N	150.83E	49	***	102451	8-14-67	LUNAR ORB	LO.F=80MM B6W	-	NONE	1237K	15462500	281	25.4 11	-.00
			CAM.NAD.=	37.85N	178.75E		SWING=	90.	PHASE=	126.	EMIS.ANG.=	47.	CAM.RAD.=	2976.2 KM.		SUN AZM=262.9	
			LAC 31 WIENER		1/4 MOONS SPHERE			LAC 32 HUTTON		LAC 18 TIKHOV						LAC 49 E.M.MOSCOVIE	
L 5	2	124	39.09N	142.80E	54	***	022004	8-15-67	LUNAR ORB	LO.F=80MM B6W	-	NONE	1237K	15462500	281	25.0 11	-.00
			CAM.NAD.=	37.82N	170.09E		SWING=	91.	PHASE=	125.	EMIS.ANG.=	46.	CAM.RAD.=	2976.2 KM.		SUN AZM=262.9	
			LAC 31 WIENER		1/4 MOONS SPHERE			LAC 18 TIKHOV		LAC 32 HUTTON						LAC 49 E.M.MOSCOVIE	

TOTAL PHOTOS IN THIS GROUP = 8

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SM.A. = SUPER WIDE ANGLE LENS; EKTR=EXTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIDGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 16\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NFG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR M SEC (I=ESTIMATED)	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.HI K=KM.	SCALE AT PRIN. PT. PT.	TILT AZ	SUN SIDE ANG. FR.	ANGLE ANG. LAP	FOOT FWD. R. 8
L 2	1	34	4.71N 171.55E	56	***	062254	11-19-66	LUNAR ORB HI. 610MM B&W	- NONE	1453K	2381967	4	16.3 19	-	***
CAM.NAD.= 9.945 172.29E SWING= 355. PHASE= 70. EMIS.ANG.= 31. CAM.RAD.= 3192.2 KM. SUN AZM=268.1															
WESTERN PART OF LAC 68 SHARONOV ; S. W. PART OF LAC 50 MORSE 6 N. W. PART OF LAC 86 DAEDALUS															
L 5	2	53	48.97N 176.11W	29	***	184006	8-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	1191K	14887500	297	25.6 9	-	***
CAM.NAD.= 42.56N 147.00W SWING= 107. PHASE= 126. EMIS.ANG.= 47. CAM.RAD.= 2930.2 KM. SUN AZM=261.6															
LAC 18 TIKHOV ; W1/4 MOONS SPHERE ; LAC 50 MORSE ; LAC 51 JACKSON 6 LAC 32 HUTTON															
L 5	1	79	38.66N 167.55E	39	***	023432	8-13-67	LUNAR ORB HI. 610MM B&W	- NONE	1245K	2040984	281	25.8 11	-	***
CAM.NAD.= 37.73N 163.64W SWING= 89. PHASE= 128. EMIS.ANG.= 48. CAM.RAD.= 2984.2 KM. SUN AZM=263.3															
CENTRAL PART OF LAC 32 HUTTON ; N. E. PART OF LAC 49 E.H.MOSCOV 6 N. W. PART OF LAC 50 MORSE															
L 5	2	79	38.66N 167.58E	39	***	023432	8-13-67	LUNAR ORB LO.F=80MM B&W	- NONE	1245K	15562500	281	25.8 11	-	***
CAM.NAD.= 37.72N 163.64W SWING= 89. PHASE= 128. EMIS.ANG.= 48. CAM.RAD.= 2984.2 KM. SUN AZM=263.3															
LAC 32 HUTTON ; W1/4 MOONS SPHERE ; LAC 33 SCHNELLER ; LAC 18 TIKHOV 6 LAC 19 CARNOT ROWLAN															
L 5	2	85	38.85N 158.87E	44	***	182940	8-13-67	LUNAR ORB LO.F=80MM B&W	- NONE	1239K	15487500	281	25.8 11	-	***
CAM.NAD.= 37.80N 172.42W SWING= 90. PHASE= 127. EMIS.ANG.= 48. CAM.RAD.= 2978.2 KM. SUN AZM=262.9															
LAC 32 HUTTON ; W1/4 MOONS SPHERE ; LAC 18 TIKHOV ; LAC 50 MORSE 6 LAC 17															

TOTAL PHOTOS IN THIS GROUP = 5

REPRODUCIBILITY OF THIS  
 ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+), ( ), OR(U) = NO INFO ~ = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EXTR.=EXTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREN; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10° AS EXPOS SPEED = 1/1000 (UH = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.PI.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT: SCALE AT		T I L T		SUN SIDE,		
											TUDE	PRIN.	AZ	ANG.	ANG.	FAD.	
#	#	#	MAIN	LONG.	#	TIMES-HR	M SEC					M=N.MI K=KM.	PT.	FR.	LAP	B. R	
L 5	1	39	38.71N	159.46W	19	000	0000	105251	8-10-67 LUNAR ORB HI, 610MM B&W	-	NONE	1252K	2052459	283	26.8	10	-...
CAM.NAD.= 37.14N 128.86W SWING= 89. PHASE= 131. EMIS.ANG.= 51. CAM.RAD.= 2991.2 KM. SUN AZM=263.6																	
EASTERN PART OF LAC 33 SCHNELLER ; WESTERN PART OF LAC 34 FOWLER & NORTHERN PART OF LAC 51 JACKSON																	
L 5	2	53	48.97N	176.11W	29	000	0000	184006	8-11-67 LUNAR ORB LO.F=80MM B&W	-	NONE	1191K	14887500	297	25.6	9	-...
CAM.NAD.= 42.56N 147.00W SWING= 107. PHASE= 126. EMIS.ANG.= 47. CAM.RAD.= 2930.2 KM. SUN AZM=261.6																	
LAC 18 TIKHOV ; 1/4 MOONS SPHERE ; LAC 50 MORSE ; LAC 51 JACKSON & LAC 32 HUTTON																	

TOTAL PHOTOS IN THIS GROUP \* 2

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. % = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT (AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAG#. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS (PLANAR,BIOGEN,SONAR); FOCAL LENGTH (MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN	SIDE,			
SUN	ROLL	OR	LAT.	"	"	"	TIMES-HR	M SEC	"	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	FWD.			
"	"	MAIN	LUNG.	"	"	"	(ESTIMATED)	"	"	TYPE	"	M=N.MI	PT.	FR.	LAP	"			
"	"	"	"	"	"	"	"	"	"	"	"	K=KM.	"	VERT	"	"			
L 5	1	28	26.39N	133.19W	8	000	0000	145230	8-08-67	LUNAR ORB HI.	610MM B&W	-	NONE	5015K	8221311	281	8.7	8	-..
CAM.NAD.= 24.16N 103.16W SWING= 90. PHASE= 118. EMIS.ANG.= 36.																			
LAC 52 JOULE E.MA : W1/4 MOONS SPHERE : LAC 19 CARNOT ROW : LAC 20 COULUMR																			
L 5	2	28	26.81N	133.10W	8	000	0000	145230	8-08-67	LUNAR ORB LO.	F=80MM B&W	-	NONE	5015K	62687499	282	8.6	8	-..
CAM.NAD.= 24.16N 103.16W SWING= 91. PHASE= 118. EMIS.ANG.= 36.																			
LAC 52 JOULE E.MA : LUNAR DISC FARSID : LUNAR W. HEMISPHE & LIMB OR HORIZON																			
L 5	1	31	27.92N	135.74W	11	000	0000	093219	8-09-67	LUNAR ORB HI.	610MM B&W	-	NONE	1364K	2236066	280	21.8	2	-..
CAM.NAD.= 26.13N 113.59W SWING= 89. PHASE= 130. EMIS.ANG.= 42.																			
DEGRADED NEGATIVE : LAC 52 JOULE E.MACH																			
L 5	2	31	28.04N	135.71W	11	000	0000	093219	8-09-67	LUNAR ORB LO.	F=80MM B&W	-	NONE	1364K	17050000	280	21.8	2	-..
CAM.NAD.= 26.12N 113.59W SWING= 89. PHASE= 130. EMIS.ANG.= 42.																			
LAC 52 JOULE E.MA : W1/4 MOONS SPHERE : LUNAR W. HEMISPHE : LAC 122 LANGHUIR STETSON																			
L 5	1	32	24.01N	138.12W	13	000	0000	155741	8-09-67	LUNAR ORB HI.	610MM B&W	-	NONE	1397K	2290144	280	21.3	1	-..
CAM.NAD.= 22.61N 116.73W SWING= 90. PHASE= 130. EMIS.ANG.= 41.																			
DEGRADED NEGATIVE : LAC 52 JOULE E.MACH																			
L 5	2	32	24.94N	138.09W	13	000	0000	155741	8-09-67	LUNAR ORB LO.	F=80MM B&W	-	NONE	1397K	17462500	281	21.3	1	-..
CAM.NAD.= 22.60N 116.73W SWING= 90. PHASE= 130. EMIS.ANG.= 41.																			
LAC 52 JOULE E.MA : W1/4 MOONS SPHERE : LUNAR W. HEMISPHE : LAC 88 S.W.HERTZSPRUNG,PASCHEN																			
L 5	2	39	38.84N	159.43W	19	000	0000	105252	8-10-67	LUNAR ORB LO.	F=80MM B&W	-	NONE	1252K	15650000	283	26.8	10	-..
CAM.NAD.= 37.14N 128.86W SWING= 90. PHASE= 131. EMIS.ANG.= 51.																			
LAC 33 SCHNELER : W1/4 MOONS SPHERE : LIMB OR HORIZON : LAC 20 COULUMR																			

TOTAL PHOTOS IN THIS GROUP = 7

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR(U) = NO INFO \* = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTH=EKTA 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREH; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER & AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR,PHOTO	PRIN,PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT SCALE AT	T I L T	SUN SIDE,	T I L T			
													SWAY	ANG.	ANG.	
STOR	ROLL	OR	LAT.	N	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
I	#	MAIN	LONG.		(ESTIMATED)			TYPE		M=N.MI	PT.	FR.	LAP	VERT	S. R	
										K*KM.						
L 5	1	24	26.54N	120.17W	5	***	135051	8-07-67 LUNAR ORB HI. 610MM B&W	-	NONE	5009K	8211475	281	8.9	8	-.00
			CAM.NAD.= 24.01N	89.35W				SWING= 90. PHASE= 119. EMIS.ANG.= 37.		CAM.RAD.=	6748.2 KM.		SUN	A7M=267.8		
			LAC 53 UHM FERSMAN					1/4 MOONS SPHERE; LAC 135 PINGRE N.HAUSEN		LAC 20 COULOMB			LAC 89 S.E.HERTZ			
L 5	2	24	26.96N	120.08W	5	***	135051	8-07-67 LUNAR ORB LU.F=80MM B&W	-	NONE	5009K	62612499	282	8.8	8	-.00
			CAM.NAD.= 24.01N	89.35W				SWING= 91. PHASE= 119. EMIS.ANG.= 37.		CAM.RAD.=	6748.2 KM.		SUN	A7M=267.8		
			LAC 53 UHM FERSMAN					LUNAR DISC FAR SID; LUNAR N. HEMISPHE & LIMB OR HORIZON								

TOTAL PHOTOS IN THIS GROUP = 2



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

L	4	1	188	13.38N	89.22W	33	***	****	060409	5-25-67	LUNAR	ORB	HI.	610MM	B&W	-	NONE	2675K	4385246	255	1.3	15	-.27
CAM.NAD.= 13.92N 87.19W SWING= 69. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4414.2 KM. SUN AZM= 92.7																							
LAC 55 VASCOUEGAM ; LAC 72 ELVEY NOBEL ; LAC 37 STRUVE,DAL ; LAC 54 BELB LAUE & LAC 73 RICCIOLI,NE.O																							
L	4	1	109	41.71N	79.99W	33	***	****	063636	5-25-67	LUNAR	ORB	HI.	610MM	B&W	-	NONE	2878K	4718033	110	1.5	18	-.77
CAM.NAD.= 42.88N 84.00W SWING= 273. PHASE= 77. EMIS.ANG.= 5. CAM.RAD.= 4617.2 KM. SUN AZM= 106.1																							
WESTERN PART OF LAC 22 SE.GERARD,BUNSEN,HARDING ; LAC 21 N.GERARD,R & LAC 10 BARRAGE,N.PROCELARM.																							
L	4	2	190	70.34N	63.47W	33	***	****	071554	5-25-67	LUNAR	ORB	LO.F=80MM	B&W	-	NONE	3373K	42162500	125	1.9	14	-.00	
CAM.NAD.= 72.71N 72.45W SWING= 306. PHASE= 82. EMIS.ANG.= 6. CAM.RAD.= 5112.2 KM. SUN AZM= 129.2																							
LAC 2 ANAXIMENES. ; W>1/2 MOON SPHERE ; LAC 54 BELB LAUE ; LAC 15 M.HUMBOLTIANUM & LAC 27 GEMINUS,ATLAS																							
L	4	1	196	12.86N	94.86W	34	***	****	180431	5-25-67	LUNAR	ORB	HI.	610MM	B&W	-	NONE	2675K	4385246	224	.9	15	-.25
CAM.NAD.= 13.88N 93.82W SWING= 38. PHASE= 73. EMIS.ANG.= 2. CAM.RAD.= 4414.2 KM. SUN AZM= 92.7																							
EASTERN PART OF LAC 72 ELVEY NOBEL ; EASTERN PART OF LAC 54 BELB LAUE ; LAC 90 LOWELL & LAC 37 STRUVE,DALTON																							

TOTAL PHOTOS IN THIS GROUP = 4

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, \$ = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUHER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONARIT) FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

PHOTO ROLL	MAG	FR.	PHOTO OR	PRIN.	PT.	ORB	GET	GHT	H-DA-YR	CAMERA-LENS OR SENSOR	FILM-EXPOSURE AND FILTER	ALTITUDE H=N.M K=KM.	SCALE AT PRIN.	TILT AZ	TILT ANG.	SUN SIDE ANG.	FWD. LAP
#	#	MAIN		LONG.			TIMES-HH	MM	SEC	TYPE			PT.		FR.		%
							(ESTIMATED)								VERT		
L 4 2	160	42.79S	54.52W	29	***	045917	5-23-67	LUNAR	ORB	LO.F=80MM B&W	-	NONE	3012K	37650000	99	4.8 17	-.00
		CAM.NAD.= 42.03S	65.80W			SWING= 296.		PHASE= 85.	EMIS.ANG.= 13.	CAM.RAD.= 4751.2 KM.				SUN AZH= 72.3			
		LAC 110 SCHICKARD, LACROIX															
L 4 2	167	42.01S	60.70W	30	***	170012	5-23-67	LUNAR	ORB	LO.F=80MM B&W	-	NONE	3009K	37612500	95	5.0 17	-.00
		CAM.NAD.= 41.82S	72.40W			SWING= 292.		PHASE= 86.	EMIS.ANG.= 14.	CAM.RAD.= 4748.2 KM.				SUN AZH= 72.6			
		LAC 110 SCHICKARD, LACROIX															
L 4 1	168	14.45S	68.18W	30	***	173229	5-23-67	LUNAR	ORB	H1. 610MM B&W	-	NONE	2722K	4462295	103	.9 17	-.47
		CAM.NAD.= 14.14S	69.56W			SWING= 288.		PHASE= 76.	EMIS.ANG.= 2.	CAM.RAD.= 4461.2 KM.				SUN AZH= 84.9			
		LAC 74 GRIMALDI, BILLY															
L 4 1	169	13.69N	68.49W	30	***	180302	5-23-67	LUNAR	ORB	H1. 610MM B&W	-	NONE	2672K	4380328	248	.8 17	-.26
		CAM.NAD.= 14.14N	67.33W			SWING= 62.		PHASE= 71.	EMIS.ANG.= 2.	CAM.RAD.= 4411.2 KM.				SUN AZH= 93.5			
		LAC 56 HEVELIUS, R															
L 4 1	173	14.77S	75.41W	31	***	053243	5-24-67	LUNAR	ORB	H1. 610MM B&W	-	NONE	2724K	4465574	116	.6 15	-.48
		CAM.NAD.= 14.37S	76.23W			SWING= 301.		PHASE= 76.	EMIS.ANG.= 1.	CAM.RAD.= 4463.2 KM.				SUN AZH= 85.1			
		EASTERN PART OF LAC 73 RICCIOLI, NE. ORIENTAL															
L 4 1	174	13.37N	76.00W	31	***	060318	5-24-67	LUNAR	ORB	H1. 610MM B&W	-	NONE	2673K	4381967	255	1.3 16	-.16
		CAM.NAD.= 13.91N	73.95W			SWING= 69.		PHASE= 71.	EMIS.ANG.= 3.	CAM.RAD.= 4412.2 KM.				SUN AZH= 93.0			
		EASTERN PART OF LAC 55 VASCODEGAM															
L 4 2	174	13.37N	76.00W	31	***	060318	5-24-67	LUNAR	ORB	LO.F=80MM B&W	-	NONE	2673K	33412500	255	1.3 16	-.50
		CAM.NAD.= 13.91N	73.95W			SWING= 69.		PHASE= 71.	EMIS.ANG.= 3.	CAM.RAD.= 4412.2 KM.				SUN AZH= 93.0			
		LAC 55 VASCODEGAM															
L 4 1	181	13.09S	82.18W	32	***	173317	5-24-67	LUNAR	ORB	H1. 610MM B&W	-	NONE	2724K	4465574	26	.9 15	-.49
		CAM.NAD.= 14.40S	82.86W			SWING= 212.		PHASE= 76.	EMIS.ANG.= 2.	CAM.RAD.= 4463.2 KM.				SUN AZH= 85.7			
		CENTRAL PART OF LAC 73 RICCIOLI, NE. ORIENTAL															
L 4 1	182	15.26N	81.41W	32	***	180342	5-24-67	LUNAR	ORB	H1. 610MM B&W	-	NONE	2674K	4383607	329	1.0 16	-.46
		CAM.NAD.= 13.88N	80.57W			SWING= 143.		PHASE= 72.	EMIS.ANG.= 3.	CAM.RAD.= 4413.2 KM.				SUN AZH= 93.7			
		CENTRAL PART OF LAC 55 VASCODEGAM															

ORIGINAL PAGE IS POOR  
 REPRODUCIBILITY OF THE

NIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT		T I L T		SUN SIDE		
											SCALE	PRIN.	AZ	ANG.	ANG.	FWD.	
SIUN ROLL	OR	LAT.	LONG.	#	TIMES-HH	M SEC		SENSOR	AND FILTER	TUDE	PT.	FR.	LAP				
#	#	MAIN			(ESTIMATED)			TYPE		M=N,M	K=KM.	VERT	R. X				
L 4	2	182	15.26N	81.42W	32	***	0000	180342	5-24-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2674K	33425000	329	1.0 16 -0.66
CAM.NAD.= 13.88N 80.57W SWING= 143. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4413.2 KM. SUN AZH= 93.7																	
LAC 55 VASCOUEGAM : >1/2 MOON SPHERE ; LAC 123 STEKLOV ; LAC 21 N.GERARD,BOOLE 6 LAC 24 SINUS IRIDUM																	
L 4	2	186	42.26S	81.34W	33	***	0000	050123	5-25-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3006K	37575000	95	4.7 16 -0.00
CAM.NAD.= 41.96S 92.48W SWING= 293. PHASE= 87. EMIS.ANG.= 13. CAM.RAD.= 4745.2 KM. SUN AZH= 74.2																	
LAC 109 PIAZZI,V.BOUVARD ; >1/2 MOON SPHERE ; LAC 144 SCOTT,S.POLE NEAR SIDE >6 LAC 72 ELVEY NOBEL																	
L 4	1	187	14.47S	89.06W	33	***	0000	053334	5-25-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2723K	4463934	145	0.5 14 -0.43
CAM.NAD.= 14.36S 89.48W SWING= 330. PHASE= 77. EMIS.ANG.= 1. CAM.RAD.= 4462.2 KM. SUN AZH= 85.4																	
LAC 73 RICCIOLI,NE.ORIENTAL ; LAC 90 LOWELL ; LAC 108 H.ORIENTISW 1/3 @ 6 LAC 91 EICHSTADT,SE																	
L 4	1	188	13.38N	89.22W	33	***	0000	060409	5-25-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2675K	4385246	255	1.3 15 -0.27
CAM.NAD.= 13.72N 87.19W SWING= 69. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4414.2 KM. SUN AZH= 92.7																	
LAC 55 VASCOUEGAM : LAC 72 ELVEY NOBEL ; LAC 37 STRUVE,DAL ; LAC 54 BELB LAUE 6 LAC 73 RICCIOLI,NE.O																	
L 4	2	188	13.39N	89.22W	33	***	0000	060409	5-25-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2675K	33437500	255	1.3 15 -0.78
CAM.NAD.= 13.92N 87.19W SWING= 69. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4414.2 KM. SUN AZH= 92.7																	
LAC 55 VASCOUEGAM : >1/2 MOON SPHERE ; LAC 123 STEKLOV ; LAC 21 N.GERARD,BOOLE 6 LAC 24 SINUS IRIDUM																	

TOTAL PHOTOS IN THIS GROUP = 14

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR(U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTH, EXTAR 2.8 LENS;  
 HSB= HASSFLBLAD; MAUR= MAURET; ZP, ZB, ZS = ZEISS LENS(PLANAR, BIOGEN, SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NFG. AT PP IF ALT NOT D.O

MIS SION	MAG ROLL	FR. OR MAIN	PHOTO LAT.	PRIN. LAT.	PT. LONG.	ORB N	GET TIMES-HR M SEC (I=ESTIMATED)	GMT N-DA-YH	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE M=N.MI K=KM.	SCALE PRIN. PT.	T I L T AZ FR. VERT	SUN SIDE, ANG. ANG. FWD. LAP
L 1	2	174*	1.96N	57.73W	96 ***	***	200601	8-28-66	LUNAR ORB LO.F=80MM B&W	- NONE	72K	900000	233	17.7 5 -..
CAM.NAD.= 2.41N 57.11W SWING= 52. PHASE= 70. EMIS.ANG.= 18.														
S. E. PART OF LAC 56 HEVELIUS, REINER														
L 2	1	213	7.96N	52.77W	100 ***	***	141609	11-25-66	LUNAR ORB HI. 610MM B&W	- NONE	51K	83607	11	68.5 11 -..
CAM.NAD.= 3.30N 53.75W SWING= 179. PHASE= 96. EMIS.ANG.= 73.														
EASTERN PART OF LAC 56 HEVELIUS, REINER														
L 2	2	213	8.00N	52.75W	100 ***	***	141609	11-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	11	68.6 11 -..
CAM.NAD.= 3.30N 53.74W SWING= 179. PHASE= 96. EMIS.ANG.= 73.														
EASTERN PART OF LAC 56 HEVELIUS, REINER														
L 2	1	214	2.86N	53.61W	101 ***	***	174515	11-25-66	LUNAR ORB HI. 610MM B&W	- NONE	50K	81967	140	.6 12 -..
CAM.NAD.= 2.87N 53.62W SWING= 309. PHASE= 78. EMIS.ANG.= 1.														
S. W. PART OF LAC 56 HEVELIUS, REINER														
L 2	2	214	2.86N	53.60W	101 ***	***	174515	11-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	128	.5 12 -..
CAM.NAD.= 2.87N 53.61W SWING= 297. PHASE= 78. EMIS.ANG.= 1.														
S. W. PART OF LAC 56 HEVELIUS, REINER														
L 2	1	215	7.00N	57.98W	102 ***	***	211253	11-25-66	LUNAR ORB HI. 610MM B&W	- NONE	53K	84885	11	62.8 10 -..
CAM.NAD.= 3.49N 58.73W SWING= 179. PHASE= 96. EMIS.ANG.= 66.														
CENTRAL PART OF LAC 56 HEVELIUS, REINER														
L 2	2	215	7.02N	57.97W	102 ***	***	211254	11-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	53K	662500	12	62.9 10 -..
CAM.NAD.= 3.48N 58.73W SWING= 179. PHASE= 96. EMIS.ANG.= 66.														
CENTRAL PART OF LAC 56 HEVELIUS, REINER														
L 3	1	214	7.05N	64.39W	96 ***	***	224304	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	63K	103279	360	65.7 6 -..
CAM.NAD.= 1.90N 64.41W SWING= 169. PHASE= 86. EMIS.ANG.= 71.														
WESTERN PART OF LAC 56 HEVELIUS, REINER														
L 3	2	214	7.07N	64.39W	96 ***	***	224304	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	63K	787500	360	65.7 6 -..
CAM.NAD.= 1.90N 64.40W SWING= 169. PHASE= 86. EMIS.ANG.= 71.														
WESTERN PART OF LAC 56 HEVELIUS, REINER														

6 LIMB OR HORIZON

HIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDE,
SION ROLL	OR	LAT.	#	TIMES-HR	M SEC			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FND.
#	#	MAIN	LONG.	(ESTIMATED)				TYPE		M=N, MI	PT.	FR.	LAP
										K=KM.		VERT	X, X
L 3	1	215	2.02N	66.70W	97	000	021124	2-23-67 LUNAR ORB HI. 610MM B&W	-	NONE	65K	106557	273 1.1 6 -1.00
CAM.NAD.= 2.01N 66.66W SWING= 73. PHASE= 83. EMIS.ANG.= 1. CAM.RAD.= 1809.2 KM. SUN AZM= 91.6													
S. W. PART OF LAC 56 HEVELIUS, REINER													
L 3	2	215	2.02N	66.70W	97	000	021124	2-23-67 LUNAR ORB LO.F=80MM B&W	-	NONE	65K	812500	277 1.2 6 -1.00
CAM.NAD.= 2.01N 66.65W SWING= 77. PHASE= 83. EMIS.ANG.= 1. CAM.RAD.= 1809.2 KM. SUN AZM= 91.6													
S. W. PART OF LAC 56 HEVELIUS, REINER													
L 4	2	142	42.04S	33.37W	26	000	165605	5-21-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3007K	37587500	93 5.2 20 -1.00
CAM.NAD.= 42.14S 45.58W SWING= 291. PHASE= 84. EMIS.ANG.= 14. CAM.RAD.= 4746.2 KM. SUN AZM= 70.4													
LAC 111 WILHELM, ELGER, MEE ; LAC 144 SCOTT, S. POLE NEAR SIDE >6 LAC 56 HEVELIUS, REI													
L 4	2	148	42.94S	41.38W	27	000	045722	5-22-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3009K	37612500	99 4.6 18 -1.00
CAM.NAD.= 42.11S 52.33W SWING= 297. PHASE= 84. EMIS.ANG.= 13. CAM.RAD.= 4748.2 KM. SUN AZM= 71.6													
LAC 110 SCHICKARD, LACHUIX ; LAC 144 SCOTT, S. POLE NEAR SIDE >6 LAC 56 HEVELIUS, REI													
L 4	1	149	15.05S	48.76W	27	000	052940	5-22-67 LUNAR ORB HI. 610MM B&W	-	NONE	2720K	4459016	127 .7 18 -.49
CAM.NAD.= 14.40S 49.64W SWING= 313. PHASE= 74. EMIS.ANG.= 2. CAM.RAD.= 4459.2 KM. SUN AZM= 84.4													
LAC 75 LETRONNE, F ; LAC 74 GRIMALDI, B ; LAC 92 BYRGIUS, DA ; LAC 93 M. HUMOR., GASSENDI ; LAC 56 HEVELIUS, REIN													
L 4	1	150	12.70N	49.29W	27	000	060012	5-22-67 LUNAR ORB HI. 610MM B&W	-	NONE	2468K	4373770	234 1.3 18 -.23
CAM.NAD.= 13.91N 47.59W SWING= 48. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 4407.2 KM. SUN AZM= 93.5													
LAC 57 KEPLER, ENC ; LAC 56 HEVELIUS, R ; LAC 39 ARISTARCHUS ; LAC 38 SELEUCUS, SCHROTER V. ; LAC 75 LETRONNE, FLAM													
L 4	2	155	42.40S	48.89W	28	000	165827	5-22-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3011K	37637500	95 4.3 17 -.00
CAM.NAD.= 42.07S 59.07W SWING= 293. PHASE= 84. EMIS.ANG.= 12. CAM.RAD.= 4750.2 KM. SUN AZM= 72.8													
LAC 110 SCHICKARD, LACHUIX ; LAC 144 SCOTT, S. POLE NEAR SIDE >6 LAC 56 HEVELIUS, REI													
L 4	1	156	14.88S	55.80W	28	000	173043	5-22-67 LUNAR ORB HI. 610MM B&W	-	NONE	2722K	4462295	136 .4 17 -.49
CAM.NAD.= 14.39S 56.29W SWING= 321. PHASE= 74. EMIS.ANG.= 1. CAM.RAD.= 4461.2 KM. SUN AZM= 84.7													
EASTERN PART OF LAC 74 GRIMALDI, B ; EASTERN PART OF LAC 92 BYRGIUS, DA ; LAC 56 HEVELIUS, REINER ; LAC 93 M. HUMOR., GASS													
L 4	1	157	13.36N	56.27W	28	000	180116	5-22-67 LUNAR ORB HI. 610MM B&W	-	NONE	2469K	4375410	255 1.4 17 -.28
CAM.NAD.= 13.91N 54.17W SWING= 69. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 4408.2 KM. SUN AZM= 93.4													
EASTERN PART OF LAC 56 HEVELIUS, REINER ; EASTERN PART OF LAC 38 SELEUCUS, S & NORTHERN PART OF LAC 74 GRIMALDI, BIL													
L 4	2	157	13.36N	56.27W	28	000	180116	5-22-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2469K	33362500	255 1.4 17 -.58
CAM.NAD.= 13.91N 54.17W SWING= 69. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 4408.2 KM. SUN AZM= 93.4													
LAC 56 HEVELIUS, R ; >1/2 MOON SPHERE ; LAC 92 BYRGIUS, DA ; LAC 10 BABBAGE, N. PROCELARH. ; LAC 25 CASSINI, ALPS													
L 4	1	161	15.13S	61.98W	29	000	053134	5-23-67 LUNAR ORB HI. 610MM B&W	-	NONE	2723K	4463934	129 .8 17 -.48
CAM.NAD.= 14.36S 62.94W SWING= 315. PHASE= 75. EMIS.ANG.= 2. CAM.RAD.= 4462.2 KM. SUN AZM= 84.7													
CENTRAL PART OF LAC 74 GRIMALDI, B ; CENTRAL PART OF LAC 92 BYRGIUS, DA ; LAC 56 HEVELIUS, REINER ; LAC 109 PIAZZI, V. ROU													
L 4	1	162	13.22N	62.17W	29	000	060208	5-23-67 LUNAR ORB HI. 610MM B&W	-	NONE	2470K	4377049	243 1.0 17 -.30
CAM.NAD.= 13.93N 60.75W SWING= 57. PHASE= 71. EMIS.ANG.= 3. CAM.RAD.= 4409.2 KM. SUN AZM= 93.4													
WESTERN PART OF LAC 56 HEVELIUS, REINER ; CENTRAL PART OF LAC 38 SELEUCUS, S & N. W. PART OF LAC 74 GRIMALDI, BIL													

MIS SION	MAG ROLL	FR, PHOTO OR LAT	PRIN, PT. LAT	ORB #	G&T TIMES-HR M SEC (=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE, ANG. FR. VERT	SIDE, ANG. LAP R
L 4	2	162	13.23N	62.18W	29	***	060208	5-23-67 LUNAR ORB LO.F=80MM B&W	- NONE	2670K	33375000	243	1.0 17	-.78
CAM.NAD.= 13.93N 60.75W SWING= 57. PHASE= 71. EMIS.ANG.= 3. CAM.RAD.= 4409.2 KM. SUN AZM= 93.4														
LAC 56 HEVELIUS, R : >1/2 MOON SPHERE ; LAC 109 PIAZZI, V. ; LAC 21 N. GERARD, BOOLE & LAC 25 CASSINI, ALPS														
L 4	1	168	14.45S	68.18W	30	***	173229	5-23-67 LUNAR ORB HI. 610MM B&W	- NONE	2722K	4462295	103	.9 17	-.47
CAM.NAD.= 14.14S 69.56W SWING= 288. PHASE= 76. EMIS.ANG.= 2. CAM.RAD.= 4461.2 KM. SUN AZM= 84.9														
LAC 74 GRIMALDI, BILLY ; LAC 73 RICCIOLI, NE. ORIENTAL ; LAC 91 EICHSTADT, SE. ORIENTAL & LAC 92 BYRGUIS, DARN														
L 4	1	169	13.69N	68.49W	30	***	180302	5-23-67 LUNAR ORB HI. 610MM B&W	- NONE	2672K	4380328	248	.8 17	-.26
CAM.NAD.= 14.14N 67.33W SWING= 62. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 4411.2 KM. SUN AZM= 93.5														
LAC 56 HEVELIUS, R : LAC 55 VASCO DE GAMA ; LAC 38 SELEUCUS, S ; LAC 37 STRUVE, DALTON & LAC 74 GRIMALDI, BILL														
L 4	2	169	13.70N	68.49W	30	***	180302	5-23-67 LUNAR ORB LO.F=80MM B&W	- NONE	2672K	33400000	248	.8 17	-.78
CAM.NAD.= 14.14N 67.33W SWING= 62. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 4411.2 KM. SUN AZM= 93.5														
LAC 56 HEVELIUS, R : >1/2 MOON SPHERE ; LAC 109 PIAZZI, V. ; LAC 21 N. GERARD, BOOLE & LAC 12 PLATO, ALPINE														
L 4	2	180	40.83S	75.23W	32	***	170054	5-24-67 LUNAR ORB LO.F=80MM B&W	- NONE	3009K	37612500	85	4.6 16	-.00
CAM.NAD.= 41.99S 85.86W SWING= 283. PHASE= 87. EMIS.ANG.= 13. CAM.RAD.= 4748.2 KM. SUN AZM= 74.6														
LAC 109 PIAZZI, V. DUUVARD ; >1/2 MOON SPHERE ; LAC 144 SCOTT, S. POLE NEAR SIDE >6 LAC 72 ELVEY NOBEL														
L 5	1	210	12.67N	56.11W	83	***	213942	8-18-67 LUNAR ORB HI. 610MM B&W	- NONE	111K	181967	275	9.6 15	-.00
CAM.NAD.= 12.61N 55.49W SWING= 181. PHASE= 65. EMIS.ANG.= 10. CAM.RAD.= 1850.2 KM. SUN AZM= 91.8														
N. E. PART OF LAC 56 HEVELIUS, REINER														
L 5	2	210	12.68N	56.12W	83	***	213942	8-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	111K	1387500	275	9.7 15	-.00
CAM.NAD.= 12.61N 55.49W SWING= 181. PHASE= 65. EMIS.ANG.= 10. CAM.RAD.= 1850.2 KM. SUN AZM= 91.8														
N. E. PART OF LAC 56 HEVELIUS, REINER														
L 5	1	211	12.97N	56.09W	83	***	213947	8-18-67 LUNAR ORB HI. 610MM B&W	- NONE	111K	181967	277	9.6 15	-.08
CAM.NAD.= 12.89N 55.46W SWING= 182. PHASE= 65. EMIS.ANG.= 10. CAM.RAD.= 1850.2 KM. SUN AZM= 91.9														
N. E. PART OF LAC 56 HEVELIUS, REINER														
L 5	2	211	12.98N	56.10W	83	***	213947	8-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	111K	1387500	277	9.7 15	-.87
CAM.NAD.= 12.90N 55.46W SWING= 183. PHASE= 65. EMIS.ANG.= 10. CAM.RAD.= 1850.2 KM. SUN AZM= 91.9														
N. E. PART OF LAC 56 HEVELIUS, REINER														
L 5	1	212	13.28N	56.06W	83	***	213952	8-18-67 LUNAR ORB HI. 610MM B&W	- NONE	111K	181967	279	9.6 15	-.08
CAM.NAD.= 13.18N 55.43W SWING= 184. PHASE= 65. EMIS.ANG.= 10. CAM.RAD.= 1850.2 KM. SUN AZM= 92.0														
N. E. PART OF LAC 56 HEVELIUS, REINER														
L 5	2	212	13.29N	56.07W	83	***	213952	8-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	111K	1387500	279	9.7 15	-.87
CAM.NAD.= 13.19N 55.43W SWING= 184. PHASE= 65. EMIS.ANG.= 10. CAM.RAD.= 1850.2 KM. SUN AZM= 92.0														
N. E. PART OF LAC 56 HEVELIUS, REINER														
L 5	1	213	13.59N	56.04W	83	***	213957	8-18-67 LUNAR ORB HI. 610MM B&W	- NONE	112K	183607	280	9.6 15	-.08
CAM.NAD.= 13.47N 55.41W SWING= 186. PHASE= 65. EMIS.ANG.= 10. CAM.RAD.= 1851.2 KM. SUN AZM= 92.1														
N. E. PART OF LAC 56 HEVELIUS, REINER														

HIS SION	MAG KULL	FR. PHOTO OR	PRIN. PT. LAT.	PR. LONG.	GR. #	GET TIMES-HR	GMT M SEC	H-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE SCALE AT		TILT		SUN SIDE,	
											TUDE M=N.MI K=KM.	PRIN. PT.	AZ	ANG. FR. VERT	ANG.	FWD. LAP R. S
L 5	2	213	13.60N	56.05W	83 ***	213950		8-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	112K	1400000	280	9.8	15	-.87
CAM.NAD.= 13.48N 55.00W SWING= 186. PHASE= 65. EMIS.ANG.= 10. N. E. PART OF LAC 56 HEVELIUS, REINER																
L 5	1	214	13.90N	56.01W	83 ***	214003		8-18-67	LUNAR ORB HI. 610MM B&W	- NONE	112K	183607	282	9.6	15	-.8
CAM.NAD.= 13.76N 55.38W SWING= 188. PHASE= 65. EMIS.ANG.= 10. NORTHERN PART OF LAC 56 HEVELIUS, REINER																
L 5	2	214	13.91N	56.02W	83 ***	214003		8-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	112K	1400000	282	9.8	15	-.87
CAM.NAD.= 13.77N 55.38W SWING= 188. PHASE= 65. EMIS.ANG.= 10. NORTHERN PART OF LAC 56 HEVELIUS, REINER																
L 5	1	215	14.21N	55.99W	83 ***	214008		8-18-67	LUNAR ORB HI. 610MM B&W	- NONE	112K	183607	284	9.7	15	-.7
CAM.NAD.= 14.06N 55.35W SWING= 189. PHASE= 65. EMIS.ANG.= 10. NORTHERN PART OF LAC 56 HEVELIUS, REINER																
L 5	2	215	14.22N	55.99W	83 ***	214008		8-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	112K	1400000	284	9.8	15	-.87
CAM.NAD.= 14.06N 55.35W SWING= 189. PHASE= 65. EMIS.ANG.= 10. NORTHERN PART OF LAC 56 HEVELIUS, REINER																
L 5	1	216	14.53N	55.96W	83 ***	214013		8-18-67	LUNAR ORB HI. 610MM B&W	- NONE	113K	185246	285	9.7	15	-.7
CAM.NAD.= 14.35N 55.33W SWING= 191. PHASE= 65. EMIS.ANG.= 10. NORTHERN PART OF LAC 56 HEVELIUS, REINER																
L 5	2	216	14.53N	55.97W	83 ***	214013		8-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	113K	1412500	285	9.9	15	-.87
CAM.NAD.= 14.36N 55.32W SWING= 191. PHASE= 65. EMIS.ANG.= 10. NORTHERN PART OF LAC 56 HEVELIUS, REINER																

TOTAL PHOTOS IN THIS GROUP = 40

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ) ON(O) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND.  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EXTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREH; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

HIS SION	MAG KULL	PR.PHOTO OR	PKIN.PT. LAT.	ORB LONG.	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE	SCALE AT PRIN.	T I L T AZ	SUN ANG.	SIDE, ANG.	FWD. LAP
#	#	MAIN			(ESTIMATED)					M=N.MI K=KM.	PT.		FR. VERT		
L 1	2	150	1.07N	30.46W	85	0000	061838	8-27-66 LUNAR ORB LO.F=80MM B&W	- NONE	55K	487500	143	14.6	13	-.00
CAM.NAD.= 1.44N 30.74W SWING= 321. PHASE= 86. EMIS.ANG.= 15. CAM.RAD.= 1794.2 KM. SUN AZH= 88.7															
S. E. PART OF LAC 57 KEPLER, ENCKE & S. W. PART OF LAC 58 COPERNICUS, REINHOLD															
L 1	2	153	0.71N	37.09W	90	0000	233055	8-27-66 LUNAR ORB LO.F=80MM B&W	- NONE	52K	450000	275	4.7	15	-.00
CAM.NAD.= .70N 36.95W SWING= 96. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 1791.2 KM. SUN AZH= 88.6															
S. E. PART OF LAC 57 KEPLER, ENCKE															
L 1	2	154	0.58N	36.47W	90	0000	233105	8-27-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	274	4.1	16	-.48
CAM.NAD.= .57N 36.35W SWING= 95. PHASE= 70. EMIS.ANG.= 4. CAM.RAD.= 1790.2 KM. SUN AZH= 88.6															
S. E. PART OF LAC 57 KEPLER, ENCKE & N. E. PART OF LAC 75 LETRONNE, FLAMSTO															
L 1	2	155	0.45N	35.86W	90	0000	233115	8-27-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	272	3.5	16	-.47
CAM.NAD.= .45N 35.75W SWING= 94. PHASE= 70. EMIS.ANG.= 4. CAM.RAD.= 1790.2 KM. SUN AZH= 88.5															
S. E. PART OF LAC 57 KEPLER, ENCKE & N. E. PART OF LAC 75 LETRONNE, FLAMSTO															
L 1	2	156	0.32N	35.24W	90	0000	233125	8-27-66 LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	270	2.9	17	-.46
CAM.NAD.= .32N 35.15W SWING= 92. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 1789.2 KM. SUN AZH= 88.5															
S. E. PART OF LAC 57 KEPLER, ENCKE & N. E. PART OF LAC 75 LETRONNE, FLAMSTO															
L 2	1	179	2.42N	34.44W	93	0000	135801	11-24-66 LUNAR ORB HI. 610MM B&W	- NONE	45K	73770	106	.6	17	-.00
CAM.NAD.= 2.42N 34.45W SWING= 275. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1784.2 KM. SUN AZH= 91.2															
S. E. PART OF LAC 57 KEPLER, ENCKE															
L 2	2	179	2.42N	34.43W	93	0000	135801	11-24-66 LUNAR ORB LO.F=80MM B&W	- NONE	45K	562500	96	.6	17	-.00
CAM.NAD.= 2.42N 34.45W SWING= 264. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1784.2 KM. SUN AZH= 91.2															
S. E. PART OF LAC 57 KEPLER, ENCKE															
L 2	1	180	2.39N	34.32W	93	0000	135803	11-24-66 LUNAR ORB HI. 610MM B&W	- NONE	45K	73770	106	.7	18	-.8
CAM.NAD.= 2.46N 34.34W SWING= 274. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1784.2 KM. SUN AZH= 91.2															
S. E. PART OF LAC 57 KEPLER, ENCKE															
L 2	2	180	2.39N	34.31W	93	0000	135803	11-24-66 LUNAR ORB LO.F=80MM B&W	- NONE	45K	562500	96	.7	18	-.87
CAM.NAD.= 2.40N 34.33W SWING= 265. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1784.2 KM. SUN AZH= 91.2															
S. E. PART OF LAC 57 KEPLER, ENCKE															



## LAC 57 KEPLER, ENCKE

L	2	I	181	2.37N	34.20W	93	***	****	135805	11-24-66	LUNAR	ORB	HI.	610MM	B&W	CAM.	RAD.	NONE	45K	73770	105	.8	18	-.8
L 2	1	181	2.37N	34.20W	93	***	****	135805	11-24-66	LUNAR	ORB	HI.	610MM	B&W	CAM.	RAD.	NONE	45K	73770	105	.8	18	-.8	
CAM. RAD. = 1784.2 KM. SUN AZM = 91.2																								
S. E. PART OF LAC 57 KEPLER, ENCKE																								
L 2	2	181	2.37N	34.19W	93	***	****	135805	11-24-66	LUNAR	ORB	LO.F=80MM	B&W	CAM.	RAD.	NONE	45K	562500	97	.9	18	-.87		
CAM. RAD. = 1784.2 KM. SUN AZM = 91.2																								
S. E. PART OF LAC 57 KEPLER, ENCKE																								
L 2	1	182	2.34N	34.08W	93	***	****	135807	11-24-66	LUNAR	ORB	HI.	610MM	B&W	CAM.	RAD.	NONE	45K	73770	104	.9	18	-.8	
CAM. RAD. = 1784.2 KM. SUN AZM = 91.2																								
S. E. PART OF LAC 57 KEPLER, ENCKE																								
L 2	2	182	2.34N	34.07W	93	***	****	135807	11-24-66	LUNAR	ORB	LO.F=80MM	B&W	CAM.	RAD.	NONE	45K	562500	98	1.0	18	-.87		
CAM. RAD. = 1784.2 KM. SUN AZM = 91.2																								
S. E. PART OF LAC 57 KEPLER, ENCKE																								
L 2	1	183	2.32N	33.95W	93	***	****	135809	11-24-66	LUNAR	ORB	HI.	610MM	B&W	CAM.	RAD.	NONE	45K	73770	104	1.1	18	-.8	
CAM. RAD. = 1784.2 KM. SUN AZM = 91.2																								
S. E. PART OF LAC 57 KEPLER, ENCKE																								
L 2	2	183	2.32N	33.94W	93	***	****	135809	11-24-66	LUNAR	ORB	LO.F=80MM	B&W	CAM.	RAD.	NONE	45K	562500	98	1.1	18	-.87		
CAM. RAD. = 1784.2 KM. SUN AZM = 91.2																								
S. E. PART OF LAC 57 KEPLER, ENCKE																								
L 2	1	184	2.29N	33.83W	93	***	****	135811	11-24-66	LUNAR	ORB	HI.	610MM	B&W	CAM.	RAD.	NONE	45K	73770	104	1.2	18	-.8	
CAM. RAD. = 1784.2 KM. SUN AZM = 91.2																								
S. E. PART OF LAC 57 KEPLER, ENCKE																								
L 2	2	184	2.29N	33.82W	93	***	****	135811	11-24-66	LUNAR	ORB	LO.F=80MM	B&W	CAM.	RAD.	NONE	45K	562500	98	1.2	18	-.87		
CAM. RAD. = 1784.2 KM. SUN AZM = 91.2																								
S. E. PART OF LAC 57 KEPLER, ENCKE																								
L 2	1	185	2.27N	33.71W	93	***	****	135812	11-24-66	LUNAR	ORB	HI.	610MM	B&W	CAM.	RAD.	NONE	45K	73770	104	1.3	18	-.8	
CAM. RAD. = 1784.2 KM. SUN AZM = 91.2																								
S. E. PART OF LAC 57 KEPLER, ENCKE																								
L 2	2	185	2.27N	33.70W	93	***	****	135813	11-24-66	LUNAR	ORB	LO.F=80MM	B&W	CAM.	RAD.	NONE	45K	562500	99	1.3	18	-.87		
CAM. RAD. = 1784.2 KM. SUN AZM = 91.2																								
S. E. PART OF LAC 57 KEPLER, ENCKE																								
L 2	1	186	2.24N	33.59W	93	***	****	135814	11-24-66	LUNAR	ORB	HI.	610MM	B&W	CAM.	RAD.	NONE	45K	73770	103	1.4	18	-.8	
CAM. RAD. = 1784.2 KM. SUN AZM = 91.2																								
S. E. PART OF LAC 57 KEPLER, ENCKE																								
L 2	2	186	2.24N	33.58W	93	***	****	135815	11-24-66	LUNAR	ORB	LO.F=80MM	B&W	CAM.	RAD.	NONE	45K	562500	99	1.5	18	-.87		
CAM. RAD. = 1784.2 KM. SUN AZM = 91.2																								
S. E. PART OF LAC 57 KEPLER, ENCKE																								

MIS SION	MAG ROLL	FR. OR MAIN	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE M-N-MI K-KM	SCALE AT PRIN. PT.	T 1 L T AZ ANG. FR. VERT	SUN SIDE. ANG. ANG. FWD. LAP 2. 8	
L 2	1	187	1.99N	34.36W	94	000	0000	172706	11-24-66	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	100	1.0 19	-0.00
CAM-NAD.= 2.00N 34.39W SWING= 269. PHASE= 72. EMIS-ANG.= 1. CAM-RAD.= 1785.2 KM. SUN AZH= 91.1																
S. E. PART OF LAC 57 KEPLER-ENCKE																
L 2	2	187	1.99N	34.35W	94	000	0000	172706	11-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	94	1.1 19	-0.00
CAM-NAD.= 2.00N 34.38W SWING= 263. PHASE= 72. EMIS-ANG.= 1. CAM-RAD.= 1785.2 KM. SUN AZH= 91.1																
S. E. PART OF LAC 57 KEPLER-ENCKE																
L 2	1	188	1.97N	34.24W	94	000	0000	172708	11-24-66	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	101	1.2 19	-0.8
CAM-NAD.= 1.97N 34.27W SWING= 269. PHASE= 72. EMIS-ANG.= 1. CAM-RAD.= 1785.2 KM. SUN AZH= 91.1																
S. E. PART OF LAC 57 KEPLER-ENCKE																
L 2	2	188	1.97N	34.23W	94	000	0000	172708	11-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	95	1.2 19	-0.87
CAM-NAD.= 1.97N 34.26W SWING= 263. PHASE= 72. EMIS-ANG.= 1. CAM-RAD.= 1785.2 KM. SUN AZH= 91.1																
S. E. PART OF LAC 57 KEPLER-ENCKE																
L 2	1	189	1.94N	34.12W	94	000	0000	172710	11-24-66	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	101	1.3 20	-0.8
CAM-NAD.= 1.95N 34.15W SWING= 269. PHASE= 72. EMIS-ANG.= 1. CAM-RAD.= 1785.2 KM. SUN AZH= 91.1																
S. E. PART OF LAC 57 KEPLER-ENCKE																
L 2	2	189	1.94N	34.11W	94	000	0000	172710	11-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	96	1.3 20	-0.97
CAM-NAD.= 1.95N 34.14W SWING= 264. PHASE= 72. EMIS-ANG.= 1. CAM-RAD.= 1785.2 KM. SUN AZH= 91.1																
S. E. PART OF LAC 57 KEPLER-ENCKE																
L 2	1	190	1.92N	33.99W	94	000	0000	172712	11-24-66	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	101	1.4 20	-0.8
CAM-NAD.= 1.92N 34.03W SWING= 269. PHASE= 72. EMIS-ANG.= 1. CAM-RAD.= 1785.2 KM. SUN AZH= 91.1																
S. E. PART OF LAC 57 KEPLER-ENCKE																
L 2	2	190	1.92N	33.98W	94	000	0000	172712	11-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	96	1.4 20	-0.87
CAM-NAD.= 1.92N 34.02W SWING= 264. PHASE= 72. EMIS-ANG.= 1. CAM-RAD.= 1785.2 KM. SUN AZH= 91.1																
S. E. PART OF LAC 57 KEPLER-ENCKE																
L 2	1	191	1.89N	33.87W	94	000	0000	172714	11-24-66	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	101	1.5 20	-0.8
CAM-NAD.= 1.90N 33.91W SWING= 269. PHASE= 72. EMIS-ANG.= 2. CAM-RAD.= 1785.2 KM. SUN AZH= 91.1																
S. E. PART OF LAC 57 KEPLER-ENCKE																
L 2	2	191	1.89N	33.86W	94	000	0000	172714	11-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	97	1.6 20	-0.87
CAM-NAD.= 1.90N 33.90W SWING= 265. PHASE= 72. EMIS-ANG.= 2. CAM-RAD.= 1785.2 KM. SUN AZH= 91.1																
S. E. PART OF LAC 57 KEPLER-ENCKE																
L 2	1	192	1.87N	33.75W	94	000	0000	172716	11-24-66	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	101	1.6 20	-0.8
CAM-NAD.= 1.87N 33.79W SWING= 269. PHASE= 72. EMIS-ANG.= 2. CAM-RAD.= 1785.2 KM. SUN AZH= 91.1																
S. E. PART OF LAC 57 KEPLER-ENCKE																
L 2	2	192	1.87N	33.74W	94	000	0000	172716	11-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	97	1.7 20	-0.87
CAM-NAD.= 1.87N 33.78W SWING= 265. PHASE= 72. EMIS-ANG.= 2. CAM-RAD.= 1785.2 KM. SUN AZH= 91.1																
S. E. PART OF LAC 57 KEPLER-ENCKE																

L	2	1	193	1.84N	33.62W	94	000	0000	172718	11-24-66	LUNAR	ORB HI.	610MM	B&W	-	NONE	46K	75410	101	1.8	20	-.7							
																							SUN	ROLL	OR	LAT.	LONG.	M	TIMES-HR
												TYPE		M=NM, MI		PT.		FR.		LAP									
												K=KM.		VERT		R. R													
												CAM-NAO.=		1.85N		33.67W		SWING= 269.		PHASE= 72.		EMIS-ANG.= 2.		CAM-RAD.=		1785.2 KM.		SUN AZH= 91.1	
																						S. E. PART OF		LAC 57 KEPLER, ENCKE					
L	2	2	193	1.84N	33.61W	94	000	0000	172718	11-24-66	LUNAR	ORB LO.F=80MM	B&W	-	NONE	46K	575000	97	1.8	20	-.87								
												CAM-NAO.=		1.85N		33.66W		SWING= 265.		PHASE= 72.		EMIS-ANG.= 2.		CAM-RAD.=		1785.2 KM.		SUN AZH= 91.1	
																						S. E. PART OF		LAC 57 KEPLER, ENCKE					
L	2	1	194	1.81N	33.50W	94	000	0000	172720	11-24-66	LUNAR	ORB HI.	610MM	B&W	-	NONE	46K	75410	101	1.9	20	-.7							
												CAM-NAO.=		1.82N		33.55W		SWING= 269.		PHASE= 72.		EMIS-ANG.= 2.		CAM-RAD.=		1785.2 KM.		SUN AZH= 91.1	
																						S. E. PART OF		LAC 57 KEPLER, ENCKE					
L	2	2	194	1.82N	33.49W	94	000	0000	172720	11-24-66	LUNAR	ORB LO.F=80MM	B&W	-	NONE	46K	575000	97	1.9	20	-.87								
												CAM-NAO.=		1.82N		33.54W		SWING= 266.		PHASE= 72.		EMIS-ANG.= 2.		CAM-RAD.=		1785.2 KM.		SUN AZH= 91.1	
																						S. E. PART OF		LAC 57 KEPLER, ENCKE					
L	2	1	195	2.83N	42.71W	96	000	0000	002256	11-25-66	LUNAR	ORB HI.	610MM	B&W	-	NONE	48K	78689	85	1.0	14	-.00							
												CAM-NAO.=		2.83N		42.74W		SWING= 253.		PHASE= 77.		EMIS-ANG.= 1.		CAM-RAD.=		1787.2 KM.		SUN AZH= 91.2	
																						S. W. PART OF		LAC 57 KEPLER, ENCKE					
L	2	2	195	2.83N	42.71W	96	000	0000	002256	11-25-66	LUNAR	ORB LO.F=80MM	B&W	-	NONE	48K	600000	79	1.1	14	-.00								
												CAM-NAO.=		2.82N		42.74W		SWING= 248.		PHASE= 77.		EMIS-ANG.= 1.		CAM-RAD.=		1787.2 KM.		SUN AZH= 91.2	
																						S. W. PART OF		LAC 57 KEPLER, ENCKE					
L	2	1	197	1.89N	42.17W	98	000	0000	072113	11-25-66	LUNAR	ORB HI.	610MM	B&W	-	NONE	48K	78689	111	.6	18	-.00							
												CAM-NAO.=		1.90N		42.18W		SWING= 279.		PHASE= 72.		EMIS-ANG.= 1.		CAM-RAD.=		1787.2 KM.		SUN AZH= 91.1	
																						SOUTHERN PART OF		LAC 57 KEPLER, ENCKE					
L	2	2	197	1.89N	42.16W	98	000	0000	072113	11-25-66	LUNAR	ORB LO.F=80MM	B&W	-	NONE	48K	600000	100	.6	18	-.00								
												CAM-NAO.=		1.90N		42.18W		SWING= 268.		PHASE= 72.		EMIS-ANG.= 1.		CAM-RAD.=		1787.2 KM.		SUN AZH= 91.1	
																						SOUTHERN PART OF		LAC 57 KEPLER, ENCKE					
L	2	1	198	1.86N	42.04W	98	000	0000	072115	11-25-66	LUNAR	ORB HI.	610MM	B&W	-	NONE	48K	78689	109	.7	19	-.9							
												CAM-NAO.=		1.87N		42.06W		SWING= 277.		PHASE= 72.		EMIS-ANG.= 1.		CAM-RAD.=		1787.2 KM.		SUN AZH= 91.1	
																						SOUTHERN PART OF		LAC 57 KEPLER, ENCKE					
L	2	2	198	1.87N	42.03W	98	000	0000	072115	11-25-66	LUNAR	ORB LO.F=80MM	B&W	-	NONE	48K	600000	100	.7	19	-.88								
												CAM-NAO.=		1.87N		42.05W		SWING= 268.		PHASE= 72.		EMIS-ANG.= 1.		CAM-RAD.=		1787.2 KM.		SUN AZH= 91.1	
																						SOUTHERN PART OF		LAC 57 KEPLER, ENCKE					
L	2	1	199	1.84N	41.91W	98	000	0000	072117	11-25-66	LUNAR	ORB HI.	610MM	B&W	-	NONE	48K	78689	108	.8	19	-.9							
												CAM-NAO.=		1.85N		41.94W		SWING= 276.		PHASE= 72.		EMIS-ANG.= 1.		CAM-RAD.=		1787.2 KM.		SUN AZH= 91.1	
																						SOUTHERN PART OF		LAC 57 KEPLER, ENCKE					
L	2	2	199	1.84N	41.91W	98	000	0000	072117	11-25-66	LUNAR	ORB LO.F=80MM	B&W	-	NONE	48K	600000	100	.9	19	-.88								
												CAM-NAO.=		1.84N		41.93W		SWING= 268.		PHASE= 72.		EMIS-ANG.= 1.		CAM-RAD.=		1787.2 KM.		SUN AZH= 91.1	
																						SOUTHERN PART OF		LAC 57 KEPLER, ENCKE					

MIS MAG		FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE.					
SUN ROLL		OR	LAT.	"	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	ANG.					
"	"	MAIN	LONG.	"	(I=ESTIMATED)			TYPE		M=N-MI	PT.	FR.					
										K=KM.		VERT					
												FWD.					
												LAP					
												S. S					
L 2	1	200	1.81N	41.79W	98	000	072119	11-25-66	LUNAR ORB HI. 610MM B&W	-	NONE	48K	786R9	107	1.0	19	- . 9
		CAM-NAD.=	1.82N	41.81W		SWING= 275.		PHASE= 72.	EMIS-ANG.= 1.			1787.2	KM.	SUN	AZM= 91.1		
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 2	2	200	1.81N	41.78W	98	000	072119	11-25-66	LUNAR ORB LO.F=80MM B&W	-	NONE	48K	600000	100	1.0	19	- .88
		CAM-NAD.=	1.82N	41.81W		SWING= 268.		PHASE= 72.	EMIS-ANG.= 1.			1787.2	KM.	SUN	AZM= 91.1		
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 2	1	201	1.79N	41.66W	98	000	072121	11-25-66	LUNAR ORB HI. 610MM B&W	-	NONE	48K	786R9	106	1.1	19	- . 9
		CAM-NAD.=	1.79N	41.69W		SWING= 275.		PHASE= 72.	EMIS-ANG.= 1.			1787.2	KM.	SUN	AZM= 91.1		
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 2	2	201	1.79N	41.65W	98	000	072121	11-25-66	LUNAR ORB LO.F=80MM B&W	-	NONE	48K	600000	100	1.1	19	- .88
		CAM-NAD.=	1.79N	41.68W		SWING= 269.		PHASE= 72.	EMIS-ANG.= 1.			1787.2	KM.	SUN	AZM= 91.1		
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 2	1	202	1.76N	41.53W	98	000	072123	11-25-66	LUNAR ORB HI. 610MM B&W	-	NONE	48K	786R9	106	1.2	19	- . 9
		CAM-NAD.=	1.77N	41.57W		SWING= 274.		PHASE= 72.	EMIS-ANG.= 1.			1787.2	KM.	SUN	AZM= 91.1		
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 2	2	202	1.76N	41.52W	98	000	072124	11-25-66	LUNAR ORB LO.F=80MM B&W	-	NONE	48K	600000	100	1.3	19	- .88
		CAM-NAD.=	1.77N	41.56W		SWING= 269.		PHASE= 72.	EMIS-ANG.= 1.			1787.2	KM.	SUN	AZM= 91.1		
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 2	1	203	1.73N	41.41W	98	000	072125	11-25-66	LUNAR ORB HI. 610MM B&W	-	NONE	48K	786R9	105	1.3	19	- . 9
		CAM-NAD.=	1.74N	41.44W		SWING= 274.		PHASE= 72.	EMIS-ANG.= 1.			1787.2	KM.	SUN	AZM= 91.1		
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 2	2	203	1.73N	41.40W	98	000	072126	11-25-66	LUNAR ORB LO.F=80MM B&W	-	NONE	48K	600000	100	1.4	19	- .88
		CAM-NAD.=	1.74N	41.43W		SWING= 269.		PHASE= 72.	EMIS-ANG.= 1.			1787.2	KM.	SUN	AZM= 91.1		
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 2	1	204	1.71N	41.28W	98	000	072127	11-25-66	LUNAR ORB HI. 610MM B&W	-	NONE	48K	786R9	105	1.5	19	- . 9
		CAM-NAD.=	1.72N	41.32W		SWING= 273.		PHASE= 72.	EMIS-ANG.= 1.			1787.2	KM.	SUN	AZM= 91.1		
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 2	2	204	1.71N	41.27W	98	000	072128	11-25-66	LUNAR ORB LO.F=80MM B&W	-	NONE	48K	600000	100	1.5	19	- .88
		CAM-NAD.=	1.72N	41.31W		SWING= 269.		PHASE= 72.	EMIS-ANG.= 1.			1787.2	KM.	SUN	AZM= 91.1		
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 2	1	205	1.48N	42.12W	99	000	105018	11-25-66	LUNAR ORB HI. 610MM B&W	-	NONE	49K	80328	95	1.1	20	- . . .
		CAM-NAD.=	1.48N	42.15W		SWING= 263.		PHASE= 71.	EMIS-ANG.= 1.			1788.2	KM.	SUN	AZM= 91.0		
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 2	2	205	1.48N	42.11W	99	000	105018	11-25-66	LUNAR ORB LO.F=80MM B&W	-	NONE	49K	612500	89	1.1	20	- . . .
		CAM-NAD.=	1.48N	42.14W		SWING= 258.		PHASE= 71.	EMIS-ANG.= 1.			1788.2	KM.	SUN	AZM= 91.0		
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE														

HIS SION	MAG ROLL	FR, PHOTO ON	PRIN, PT. LAT.	ORB #	GET TIMES-HH M SEC (I=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS ON SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=N, MI PT. K=KM.	T I L T AZ ANG. ANG. FWD. FR. LAP VERT S. S	SUN SIDE
L 2	1	206	1.45N 41.99W	99 ***	****	105020	11-25-66	LUNAR ORB HI, 610MM B&W	- NONE	49K 80328	96 1.2 20	-.9
CAM.NAD.= 1.45N 42.02W SWING= 264. PHASE= 71. EMIS.ANG.= 1. CAM.RAD.= 1788.2 KM. SUN AZM= 91.0 SOUTHERN PART OF LAC 57 KEPLER, ENCKE												
L 2	2	206	1.45N 41.98W	99 ***	****	105020	11-25-66	LUNAR ORB LO, F=80MM B&W	- NONE	49K 612500	91 1.3 20	-.87
CAM.NAD.= 1.45N 42.02W SWING= 259. PHASE= 71. EMIS.ANG.= 1. CAM.RAD.= 1788.2 KM. SUN AZM= 91.0 SOUTHERN PART OF LAC 57 KEPLER, ENCKE												
L 2	1	207	1.42N 41.86W	99 ***	****	105022	11-25-66	LUNAR ORB HI, 610MM B&W	- NONE	49K 80328	96 1.3 21	-.9
CAM.NAD.= 1.43N 41.90W SWING= 264. PHASE= 71. EMIS.ANG.= 1. CAM.RAD.= 1788.2 KM. SUN AZM= 91.0 SOUTHERN PART OF LAC 57 KEPLER, ENCKE												
L 2	2	207	1.42N 41.85W	99 ***	****	105022	11-25-66	LUNAR ORB LO, F=80MM B&W	- NONE	49K 612500	92 1.4 21	-.88
CAM.NAD.= 1.42N 41.89W SWING= 260. PHASE= 71. EMIS.ANG.= 1. CAM.RAD.= 1788.2 KM. SUN AZM= 91.0 SOUTHERN PART OF LAC 57 KEPLER, ENCKE												
L 2	1	208	1.39N 41.73W	99 ***	****	105024	11-25-66	LUNAR ORB HI, 610MM B&W	- NONE	49K 80328	97 1.5 21	-.9
CAM.NAD.= 1.40N 41.77W SWING= 265. PHASE= 71. EMIS.ANG.= 1. CAM.RAD.= 1788.2 KM. SUN AZM= 91.0 SOUTHERN PART OF LAC 57 KEPLER, ENCKE												
L 2	2	208	1.40N 41.72W	99 ***	****	105024	11-25-66	LUNAR ORB LO, F=80MM B&W	- NONE	49K 612500	92 1.5 21	-.88
CAM.NAD.= 1.40N 41.76W SWING= 261. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 1788.2 KM. SUN AZM= 91.0 SOUTHERN PART OF LAC 57 KEPLER, ENCKE												
L 2	1	209	1.37N 41.60W	99 ***	****	105026	11-25-66	LUNAR ORB HI, 610MM B&W	- NONE	49K 80328	97 1.6 21	-.9
CAM.NAD.= 1.37N 41.65W SWING= 265. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 1788.2 KM. SUN AZM= 91.0 SOUTHERN PART OF LAC 57 KEPLER, ENCKE												
L 2	2	209	1.37N 41.59W	99 ***	****	105026	11-25-66	LUNAR ORB LO, F=80MM B&W	- NONE	49K 612500	93 1.6 21	-.88
CAM.NAD.= 1.37N 41.64W SWING= 261. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 1788.2 KM. SUN AZM= 91.0 SOUTHERN PART OF LAC 57 KEPLER, ENCKE												
L 2	1	210	1.34N 41.47W	99 ***	****	105028	11-25-66	LUNAR ORB HI, 610MM B&W	- NONE	49K 80328	97 1.7 21	-.9
CAM.NAD.= 1.35N 41.52W SWING= 266. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 1788.2 KM. SUN AZM= 91.0 SOUTHERN PART OF LAC 57 KEPLER, ENCKE												
L 2	2	210	1.34N 41.46W	99 ***	****	105028	11-25-66	LUNAR ORB LO, F=80MM B&W	- NONE	49K 612500	94 1.8 21	-.88
CAM.NAD.= 1.35N 41.51W SWING= 262. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 1788.2 KM. SUN AZM= 91.0 SOUTHERN PART OF LAC 57 KEPLER, ENCKE												
L 2	1	211	1.31N 41.34W	99 ***	****	105030	11-25-66	LUNAR ORB HI, 610MM B&W	- NONE	49K 80328	98 1.9 21	-.9
CAM.NAD.= 1.32N 41.39W SWING= 266. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 1788.2 KM. SUN AZM= 91.0 SOUTHERN PART OF LAC 57 KEPLER, ENCKE												
L 2	2	211	1.32N 41.33W	99 ***	****	105030	11-25-66	LUNAR ORB LO, F=80MM B&W	- NONE	49K 612500	94 1.9 21	-.88
CAM.NAD.= 1.32N 41.38W SWING= 262. PHASE= 71. EMIS.ANG.= 2. CAM.PAD.= 1788.2 KM. SUN AZM= 91.0 SOUTHERN PART OF LAC 57 KEPLER, ENCKE												

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## LAC 57 KEPLER, ENCKE

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE.
SUN	ROLL	OR	LAT.	#	TIMES=HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	ANG. ANG. FWD.
#	#	MAIN	LONG.		(ESTIMATED)			TYPE		M=N.MI	PT.	FR. LAP
										K=KM.	VERT	R. R
L 2	1	212	1.29N 41.21W	99 ***	0000	105032	11-25-66	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	98 2.0 21 - .9
			CAM. NAD. = 1.29N 41.27W		SWING = 266.		PHASE = 71.	EMIS. ANG. = 2.	CAM. RAD. =	1788.2 KM.		SUN AZM = 91.0
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE									
L 2	2	212	1.29N 41.20W	99 ***	0000	105033	11-25-66	LUNAR ORB LO. F=80MM B&W	- NONE	49K	612500	95 2.0 21 - .88
			CAM. NAD. = 1.29N 41.26W		SWING = 263.		PHASE = 71.	EMIS. ANG. = 2.	CAM. RAD. =	1788.2 KM.		SUN AZM = 91.0
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE									
L 2	2	213	0.00N 52.75W	100 ***	0000	141609	11-25-66	LUNAR ORB LO. F=80MM B&W	- NONE	51K	637500	11 68.6 11 - .00
			CAM. NAD. = 3.30N 53.74W		SWING = 179.		PHASE = 96.	EMIS. ANG. = 73.	CAM. RAD. =	1790.2 KM.		SUN AZM = 92.0
			EASTERN PART OF LAC 56 HEVELIUS, REINER									
L 3	1	161	1.58N 42.02W	83 ***	0000	013338	2-21-67	LUNAR ORB HI. 610MM B&W	- NONE	54K	88525	269 64.7 6 - .00
			CAM. NAD. = 1.63N 37.91W		SWING = 81.		PHASE = 16.	EMIS. ANG. = 69.	CAM. RAD. =	1793.2 KM.		SUN AZM = 91.6
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE									
L 3	2	161	1.59N 42.03W	83 ***	0000	013338	2-21-67	LUNAR ORB LO. F=80MM B&W	- NONE	54K	675000	269 64.8 6 - .00
			CAM. NAD. = 1.63N 37.90W		SWING = 81.		PHASE = 15.	EMIS. ANG. = 69.	CAM. RAD. =	1793.2 KM.		SUN AZM = 91.6
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE									
L 3	1	162	6.91N 38.10W	84 ***	0000	050201	2-21-67	LUNAR ORB HI. 610MM B&W	- NONE	55K	90164	21 69.5 11 - .00
			CAM. NAD. = 1.74N 40.11W		SWING = 177.		PHASE = 104.	EMIS. ANG. = 75.	CAM. RAD. =	1794.2 KM.		SUN AZM = 92.9
			EASTERN PART OF LAC 57 KEPLER, ENCKE									
L 3	2	162	6.94N 38.09W	84 ***	0000	050201	2-21-67	LUNAR ORB LO. F=80MM B&W	- NONE	55K	687500	21 69.5 11 - .00
			CAM. NAD. = 1.74N 40.11W		SWING = 177.		PHASE = 104.	EMIS. ANG. = 75.	CAM. RAD. =	1794.2 KM.		SUN AZM = 92.9
			EASTERN PART OF LAC 57 KEPLER, ENCKE									
L 3	1	163	1.77N 42.41W	86 ***	0000	115922	2-21-67	LUNAR ORB HI. 610MM B&W	- NONE	55K	90164	18 17.5 11 - .00
			CAM. NAD. = 1.23N 42.58W		SWING = 176.		PHASE = 85.	EMIS. ANG. = 18.	CAM. RAD. =	1794.2 KM.		SUN AZM = 91.8
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE									
L 3	2	163	1.77N 42.40W	86 ***	0000	115922	2-21-67	LUNAR ORB LO. F=80MM B&W	- NONE	55K	687500	17 17.5 11 - .00
			CAM. NAD. = 1.23N 42.58W		SWING = 176.		PHASE = 85.	EMIS. ANG. = 18.	CAM. RAD. =	1794.2 KM.		SUN AZM = 91.8
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE									
L 3	1	164	1.72N 42.26W	86 ***	0000	115924	2-21-67	LUNAR ORB HI. 610MM B&W	- NONE	55K	90164	18 17.4 11 - .10
			CAM. NAD. = 1.18N 42.44W		SWING = 177.		PHASE = 85.	EMIS. ANG. = 18.	CAM. RAD. =	1794.2 KM.		SUN AZM = 91.8
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE									
L 3	2	164	1.72N 42.26W	86 ***	0000	115924	2-21-67	LUNAR ORB LO. F=80MM B&W	- NONE	55K	687500	18 17.4 11 - .88
			CAM. NAD. = 1.18N 42.44W		SWING = 176.		PHASE = 85.	EMIS. ANG. = 18.	CAM. RAD. =	1794.2 KM.		SUN AZM = 91.8
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE									
L 3	1	165	1.66N 42.12W	86 ***	0000	115926	2-21-67	LUNAR ORB HI. 610MM B&W	- NONE	55K	90164	19 17.4 11 - .9
			CAM. NAD. = 1.13N 42.30W		SWING = 177.		PHASE = 85.	EMIS. ANG. = 18.	CAM. RAD. =	1794.2 KM.		SUN AZM = 91.8
			SOUTHERN PART OF LAC 57 KEPLER, ENCKE									

MIS SION	MAG ROLL	FR, PHOTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE, ANG. ANG. FR. VERT	FWD. LAP R. S
L 3	2	165	1.60N 42.11W	86	000	0000	115927	2-21-67 LUNAR ORB LO.F=80MM 86W	- NONE	55K	687500	18	17.5 11	- .88
		CAM.NAD.=	1.12N 42.30W		SWING=	177.	PHASE=	85.	EMIS.ANG.=	18.	CAM.RAD.=	1794.2 KM.	SUN AZM=	91.8
SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 3	1	166	1.60N 41.98W	86	000	0000	115929	2-21-67 LUNAR ORB HI. 610MM 86W	- NONE	54K	88525	19	17.4 11	- .9
		CAM.NAD.=	1.07N 42.16W		SWING=	178.	PHASE=	85.	EMIS.ANG.=	18.	CAM.RAD.=	1793.2 KM.	SUN AZM=	91.8
SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 3	2	166	1.60N 41.97W	86	000	0000	115929	2-21-67 LUNAR ORB LO.F=80MM 86W	- NONE	54K	675000	19	17.5 11	- .88
		CAM.NAD.=	1.07N 42.16W		SWING=	177.	PHASE=	85.	EMIS.ANG.=	18.	CAM.RAD.=	1793.2 KM.	SUN AZM=	91.8
SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 3	1	167	1.55N 41.83W	86	000	0000	115931	2-21-67 LUNAR ORB HI. 610MM 86W	- NONE	54K	88525	20	17.4 11	- .10
		CAM.NAD.=	1.02N 42.03W		SWING=	178.	PHASE=	85.	EMIS.ANG.=	18.	CAM.RAD.=	1793.2 KM.	SUN AZM=	91.8
SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 3	2	167	1.55N 41.83W	86	000	0000	115931	2-21-67 LUNAR ORB LO.F=80MM 86W	- NONE	54K	675000	19	17.5 11	- .88
		CAM.NAD.=	1.02N 42.02W		SWING=	178.	PHASE=	85.	EMIS.ANG.=	18.	CAM.RAD.=	1793.2 KM.	SUN AZM=	91.8
SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 3	1	168	1.49N 41.69W	86	000	0000	115934	2-21-67 LUNAR ORB HI. 610MM 86W	- NONE	54K	88525	20	17.4 11	- .9
		CAM.NAD.=	.97N 41.89W		SWING=	179.	PHASE=	85.	EMIS.ANG.=	18.	CAM.RAD.=	1793.2 KM.	SUN AZM=	91.8
SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 3	2	168	1.49N 41.68W	86	000	0000	115934	2-21-67 LUNAR ORB LO.F=80MM 86W	- NONE	54K	675000	20	17.5 11	- .88
		CAM.NAD.=	.96N 41.88W		SWING=	178.	PHASE=	85.	EMIS.ANG.=	18.	CAM.RAD.=	1793.2 KM.	SUN AZM=	91.8
SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 3	1	169	1.44N 41.55W	86	000	0000	115936	2-21-67 LUNAR ORB HI. 610MM 86W	- NONE	54K	88525	20	17.4 12	- .9
		CAM.NAD.=	.91N 41.75W		SWING=	179.	PHASE=	85.	EMIS.ANG.=	18.	CAM.RAD.=	1793.2 KM.	SUN AZM=	91.8
SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 3	2	169	1.44N 41.54W	86	000	0000	115936	2-21-67 LUNAR ORB LO.F=80MM 86W	- NONE	54K	675000	20	17.5 12	- .88
		CAM.NAD.=	.91N 41.74W		SWING=	179.	PHASE=	85.	EMIS.ANG.=	18.	CAM.RAD.=	1793.2 KM.	SUN AZM=	91.8
SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 3	1	170	1.38N 41.41W	86	000	0000	115939	2-21-67 LUNAR ORB HI. 610MM 86W	- NONE	54K	88525	21	17.4 12	- .10
		CAM.NAD.=	.86N 41.61W		SWING=	180.	PHASE=	85.	EMIS.ANG.=	18.	CAM.RAD.=	1793.2 KM.	SUN AZM=	91.8
SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 3	2	170	1.38N 41.40W	86	000	0000	115939	2-21-67 LUNAR ORB LO.F=80MM 86W	- NONE	54K	675000	21	17.5 12	- .88
		CAM.NAD.=	.86N 41.60W		SWING=	179.	PHASE=	85.	EMIS.ANG.=	18.	CAM.RAD.=	1793.2 KM.	SUN AZM=	91.8
SOUTHERN PART OF LAC 57 KEPLER, ENCKE														
L 4	2	131	36.50S 23.47E	24	000	0000	165252	5-20-67 LUNAR ORB LO.F=80MM 86W	- NONE	2999K	37487500	52	5.0 20	- .62
		CAM.NAD.=	42.20S 32.12W		SWING=	251.	PHASE=	83.	EMIS.ANG.=	14.	CAM.RAD.=	4738.2 KM.	SUN AZM=	74.0
LAC 111 WILHELM, ELGEN, MEE ; W1/2 MOON SPHERE I LAC 144 SCOTT, S. POLY NFARSIDE >6 LAC 57 KEPLER, ENCKE														

HIS MAG		FR, PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDE,
SION ROLL	OR	LAT.	#	TIMES-HR M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. FWD.
#	#	MAIN	LONG.	(I=ESTIMATED)				TYPE		M=H.MI	PT.	FR.	LAP
										K=KM.		VERT	S. S
L 4	1	132	9.14S	29.59W	24	000	172507	5-20-67 LUNAR ORB HI. 610MM B&W	-	NONE	2717K	4454098	1 3.4 19 -1.50
CAM.NAD.= 14.42S 29.69W SWING= 188. PHASE= 72. EMIS.ANG.= 9. CAM.RAD.= 4456.2 KM. SUN AZH= 86.2													
LAC 76 RHPHAELUS MT. FRAU MAURO : LAC 75 LETRONNE, FLAMSTU : LAC 93 M. HUMOR., GASSENDI : LAC 94 PITATUS, M. NU													
L 4	1	133	18.73N	29.69W	24	000	175540	5-20-67 LUNAR ORB HI. 610MM B&W	-	NONE	2673K	4381967	340 3.3 19 -1.46
CAM.NAD.= 13.91N 27.86W SWING= 156. PHASE= 68. EMIS.ANG.= 8. CAM.RAD.= 4412.2 KM. SUN AZH= 95.9													
WESTERN PART OF LAC 40 TITHUCHANIS, LAMBERT : LAC 39 ARISTARCHU : LAC 58 COPERNICUS, REINHOLD													
L 4	2	136	42.64S	27.40W	25	000	045435	5-21-67 LUNAR ORB LO, F=80MM B&W	-	NONE	3003K	37537500	97 4.8 19 -1.00
CAM.NAD.= 42.16S 38.84W SWING= 295. PHASE= 83. EMIS.ANG.= 13. CAM.RAD.= 4742.2 KM. SUN AZH= 70.3													
LAC 111 WILHELM, ELGER, MEE : >1/2 MOON SPHERE : LAC 144 SCOTT, S. POLY NEAR SIDE >6 LAC 57 KEPLER, ENCKE													
L 4	1	137	14.98S	35.28W	25	000	052651	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	2718K	4454738	119 7 19 -1.48
CAM.NAD.= 14.40S 36.33W SWING= 305. PHASE= 73. EMIS.ANG.= 2. CAM.RAD.= 4457.2 KM. SUN AZH= 84.1													
EASTERN PART OF LAC 75 LETRONNE, F : EASTERN PART OF LAC 93 M. HUMOR., GASSENDI : LAC 94 PITATUS, M. NUBIUM													
L 4	1	138	13.70N	36.45W	25	000	055724	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	2671K	4378689	263 1.3 18 -1.13
CAM.NAD.= 13.92N 34.43W SWING= 78. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4410.2 KM. SUN AZH= 94.0													
EASTERN PART OF LAC 57 KEPLER, ENCKE : EASTERN PART OF LAC 39 ARISTARCHU : NORTHERN PART OF LAC 75 LETRONNE, FLA													
L 4	2	138	13.71N	36.45W	25	000	055724	5-21-67 LUNAR ORB LO, F=80MM B&W	-	NONE	2671K	33387500	263 1.3 18 -1.61
CAM.NAD.= 13.92N 34.43W SWING= 78. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4410.2 KM. SUN AZH= 94.0													
LAC 57 KEPLER, ENC : >1/2 MOON SPHERE : LAC 110 SCHICKARD : LAC 11 J. HERSCHEL, JURAS, ROUGIER : LAC 26 EUFOXUS, BURG													
L 4	1	143	14.30S	41.41W	26	000	172822	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	2719K	4457377	85 1.0 19 -1.47
CAM.NAD.= 14.41S 42.98W SWING= 271. PHASE= 74. EMIS.ANG.= 3. CAM.RAD.= 4458.2 KM. SUN AZH= 84.3													
CENTRAL PART OF LAC 75 LETRONNE, FLAMSTU : CENTRAL PART OF LAC 93 M. HUMOR., GASSENDI : S. W. PART OF LAC 57 KEPLER, ENCKE													
L 4	1	144	14.03N	41.76W	26	000	175854	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	2669K	4375410	280 5 19 -1.30
CAM.NAD.= 13.90N 41.01W SWING= 94. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4408.2 KM. SUN AZH= 94.3													
CENTRAL PART OF LAC 57 KEPLER, ENCKE : CENTRAL PART OF LAC 39 ARISTARCHU : N. W. PART OF LAC 75 LETRONNE, FLA													
L 4	2	144	14.04N	41.77W	26	000	175854	5-21-67 LUNAR ORB LO, F=80MM B&W	-	NONE	2669K	33362500	280 5 19 -1.78
CAM.NAD.= 13.90N 41.01W SWING= 94. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4408.2 KM. SUN AZH= 94.3													
LAC 57 KEPLER, ENC : >1/2 MOON SPHERE : LAC 92 BYRGIIUS, DA : LAC 10 BABBAGE, N. PROCELARM. : LAC 26 EUFOXUS, BURG													
L 4	1	149	15.05S	48.76W	27	000	052940	5-22-67 LUNAR ORB HI. 610MM B&W	-	NONE	2720K	4459016	127 7 18 -1.49
CAM.NAD.= 14.40S 49.64W SWING= 313. PHASE= 74. EMIS.ANG.= 2. CAM.RAD.= 4459.2 KM. SUN AZH= 84.4													
LAC 75 LETRONNE, F : LAC 74 GRIMALDI, B : LAC 92 BYRGIIUS, DA : LAC 93 M. HUMOR., GASSENDI : LAC 56 HEVELIUS, REIN													
L 4	1	150	12.73N	49.29W	27	000	060012	5-22-67 LUNAR ORB HI. 610MM B&W	-	NONE	2668K	4371770	234 1.3 18 -1.23
CAM.NAD.= 13.91N 47.59W SWING= 48. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 4407.2 KM. SUN AZH= 93.5													
LAC 57 KEPLER, ENC : LAC 56 HEVELIUS, R : LAC 39 ARISTARCHU : LAC 38 SFLEUCUS, SCHROTER V. : LAC 75 LETRONNE, FLAM													
L 4	2	150	12.70N	49.29W	27	000	060012	5-22-67 LUNAR ORB LO, F=80MM B&W	-	NONE	2668K	33350000	234 1.3 18 -1.11
CAM.NAD.= 13.91N 47.59W SWING= 48. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 4407.2 KM. SUN AZH= 93.5													
LAC 57 KEPLER, ENC : >1/2 MOON SPHERE : LAC 92 BYRGIIUS, DA : LAC 11 J. HERSCHEL, JURAS, ROUGIER : LAC 58 COPERNICUS, RE													



MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HH M SEC (ESTIMATED)	GHT H SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE	SCALE PRIN. PT.	AT K=KM.	I I L T AZ ANG. ANG. FWD. FR. LAP VERT 8. 8	SUN SIDE	
L 4	2	155	42.40S	48.89W	28	...	165827	5-22-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3011K	37637500	95	4.3	17	-.00
CAM.NAD.= 42.07S 59.07W SWING= 293. PHASE= 84. EMIS.ANG.= 12. CAM.RAD.= 4750.2 KM. SUN AZH= 72.8																	
LAC 110 SCHICKARD, LACROIX I W>1/2 MOON SPHERE I LAC 144 SCOTT, S. POLE NEAR SIDE >6 LAC 56 HEVELIUS, REI																	
L 4	2	160	42.79S	54.52W	29	...	045917	5-23-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3012K	37650000	99	4.8	17	-.00
CAM.NAD.= 42.03S 65.80W SWING= 296. PHASE= 85. EMIS.ANG.= 13. CAM.RAD.= 4751.2 KM. SUN AZH= 72.3																	
LAC 110 SCHICKARD, LACROIX I W>1/4 MOON SPHERE I LAC 144 SCOTT, S. POLE NEAR SIDE >6 LAC 55 VASCO DE GAMMA																	
L 4	2	68	14.44S	68.18W	30	...	173229	5-23-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2722K	34025000	103	.9	17	-.00
CAM.NAD.= 14.14S 69.56W SWING= 288. PHASE= 76. EMIS.ANG.= 2. CAM.RAD.= 4461.2 KM. SUN AZH= 84.9																	
LAC 74 GRIMALDI, B I W>1/2 MOON SPHERE I LAC 124 PHOETIDE I LAC 22 SE. GERARD, RUNSEN, HARDING 6 LAC 57 KEPLER, ENCKE																	
L 4	2	170	41.78N	59.60W	30	...	183518	5-23-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2871K	35887500	108	2.2	20	-.19
CAM.NAD.= 43.00N 64.22W SWING= 271. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4610.2 KM. SUN AZH= 107.7																	
LAC 23 RUMKER, SHARP I W>1/2 MOON SPHERE I LAC 73 RICCIOLI, NE. ORIENTAL 6 LAC 6																	
L 4	2	172	42.93S	67.94W	31	...	050029	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3011K	37637500	100	4.8	16	-.00
CAM.NAD.= 41.98S 79.20W SWING= 297. PHASE= 86. EMIS.ANG.= 13. CAM.RAD.= 4750.2 KM. SUN AZH= 73.1																	
LAC 109 PIAZZI, V. BOUVARD I W>1/2 MOON SPHERE I LAC 144 SCOTT, S. POLE NEAR SIDE >6 LAC 72 ELVEY NOBEL																	
L 5	1	164	12.56N	30.97W	69	...	010625	8-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	109K	178689	342	.6	17	-.00
CAM.NAD.= 12.53N 30.95W SWING= 248. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1848.2 KM. SUN AZH= 92.4																	
N. E. PART OF LAC 57 KEPLER, ENCKE																	
L 5	2	164	12.57N	30.97W	69	...	010625	8-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	109K	1362500	333	.7	17	-.00
CAM.NAD.= 12.53N 30.95W SWING= 238. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1848.2 KM. SUN AZH= 92.4																	
N. E. PART OF LAC 57 KEPLER, ENCKE 6 N. W. PART OF LAC 58 COPERNICUS, REINHOLD																	
L 5	1	165	12.86N	30.94W	69	...	010630	8-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	110K	180328	349	.9	17	-.7
CAM.NAD.= 12.81N 30.93W SWING= 255. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1849.2 KM. SUN AZH= 92.5																	
N. E. PART OF LAC 57 KEPLER, ENCKE																	
L 5	2	165	12.87N	30.95W	69	...	010630	8-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	110K	1375000	341	1.0	17	-.87
CAM.NAD.= 12.82N 30.93W SWING= 247. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1849.2 KM. SUN AZH= 92.5																	
N. E. PART OF LAC 57 KEPLER, ENCKE 6 N. W. PART OF LAC 58 COPERNICUS, REINHOLD																	
L 5	1	166	13.16N	30.91W	69	...	010635	8-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	110K	180328	353	1.2	17	-.8
CAM.NAD.= 13.09N 30.90W SWING= 250. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1849.2 KM. SUN AZH= 92.6																	
N. E. PART OF LAC 57 KEPLER, ENCKE																	
L 5	2	166	13.17N	30.92W	69	...	010635	8-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	110K	1375000	347	1.2	17	-.87
CAM.NAD.= 13.10N 30.90W SWING= 252. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1849.2 KM. SUN AZH= 92.6																	
N. E. PART OF LAC 57 KEPLER, ENCKE 6 N. W. PART OF LAC 58 COPERNICUS, REINHOLD																	
L 5	1	167	13.46N	30.89W	69	...	010640	8-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	110K	180328	355	1.4	17	-.9
CAM.NAD.= 13.37N 30.88W SWING= 261. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1849.2 KM. SUN AZH= 92.7																	
N. E. PART OF LAC 57 KEPLER, ENCKE																	

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LAC 57 KEPLER, ENCKE

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HIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	H-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	TILT	SUN SIDE.	PRIN.	AZ	ANG.	ANG.	FWD.		
																					TYPE	AND FILTER
L 5	2	167	13.47N	30.89W	69	000	010640	8-17-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	110K	1375000	350	1.5	17	-0.88				
										PHASE= 73.	EMIS.ANG.= 2.			CAM.RAD.= 1849.2 KM.			SUN AZH= 92.7					
										N. E. PART OF LAC 57 KEPLER, ENCKE												
										N. W. PART OF LAC 58 COPERNICUS, REINHOLD												

TOTAL PHOTOS IN THIS GROUP = 118

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (0) = NO INFO \* = APPROXIMATELY NEXT TO MAGN. R=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; 2P,2B,2S = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

L	I	Z	MAG	PR,PHOLD	PRIN.PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE SCALE AT		TILT		SUN SIDE	
												TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
#	#	#	MAIN	LONG.	#	TIMES-HR M SEC (#=ESTIMATED)							M=N.MI K=KM.	PT.	FR.	VERT	LAP
L 1	2	134	1.91N	15.13W	75	***	195501	8-25-66	LUNAR ORB LO.F=80MM B&W	-	NONE	56K	700000	232	11.0	11	-.00
			CAM.NAD.=	2.13N	14.84W	SWING=	51.	PHASE=	70.	EMIS.ANG.=	11.	CAM.RAD.=	1795.2 KM.	SUN AZH=	88.8		
			S. E. PART OF LAC 58 COPERNICUS, REINHOLD														
L 1	2	137	1.25N	19.83W	78	***	061431	8-26-66	LUNAR ORB LO.F=80MM B&W	-	NONE	53K	662500	258	44.2	11	-.00
			CAM.NAD.=	1.59N	18.15W	SWING=	70.	PHASE=	34.	EMIS.ANG.=	46.	CAM.RAD.=	1792.2 KM.	SUN AZH=	88.7		
			SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 74 RIPHAeus MT, FRAU MAURO														
L 1	2	138	0.75N	17.28W	79	***	094136	8-26-66	LUNAR ORB LO.F=80MM B&W	-	NONE	48K	600000	208	8.9	16	-.00
			CAM.NAD.=	.97N	17.17W	SWING=	26.	PHASE=	70.	EMIS.ANG.=	9.	CAM.RAD.=	1787.2 KM.	SUN AZH=	88.6		
			S. E. PART OF LAC 58 COPERNICUS, REINHOLD														
L 1	2	139	0.27N	19.27W	81	***	163439	8-26-66	LUNAR ORB LO.F=80MM B&W	-	NONE	46K	575000	193	12.1	17	-.00
			CAM.NAD.=	.59N	19.19W	SWING=	11.	PHASE=	70.	EMIS.ANG.=	13.	CAM.RAD.=	1785.2 KM.	SUN AZH=	88.5		
			S. E. PART OF LAC 58 COPERNICUS, REINHOLD & N. E. PART OF LAC 74 RIPHAeus MT, FRAU MAURO														
L 1	2	140	0.41N	20.19W	82	***	200112	8-26-66	LUNAR ORB LO.F=80MM B&W	-	NONE	46K	575000	190	10.7	18	-.00
			CAM.NAD.=	.38N	20.14W	SWING=	8.	PHASE=	70.	EMIS.ANG.=	11.	CAM.RAD.=	1785.2 KM.	SUN AZH=	88.4		
			SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 74 RIPHAeus MT, FRAU MAURO														
L 1	2	149	0.19N	24.27W	84	***	025340	8-27-66	LUNAR ORB LO.F=80MM B&W	-	NONE	47K	587500	195	9.5	17	-.00
			CAM.NAD.=	.44N	24.20W	SWING=	14.	PHASE=	70.	EMIS.ANG.=	10.	CAM.RAD.=	1786.2 KM.	SUN AZH=	88.5		
			S. W. PART OF LAC 58 COPERNICUS, REINHOLD & N. W. PART OF LAC 74 RIPHAeus MT, FRAU MAURO														
L 1	2	150	1.07N	30.46W	85	***	061838	8-27-66	LUNAR ORB LO.F=80MM B&W	-	NONE	55K	687500	143	14.6	13	-.00
			CAM.NAD.=	1.44N	30.74W	SWING=	321.	PHASE=	86.	EMIS.ANG.=	15.	CAM.RAD.=	1794.2 KM.	SUN AZH=	88.7		
			S. E. PART OF LAC 57 KEPLER, ENCKE & S. W. PART OF LAC 58 COPERNICUS, REINHOLD														
L 1	2	151	0.10S	23.64W	86	***	094725	8-27-66	LUNAR ORB LO.F=80MM B&W	-	NONE	44K	550000	1	14.9	21	-.00
			CAM.NAD.=	.49S	23.65W	SWING=	189.	PHASE=	70.	EMIS.ANG.=	15.	CAM.RAD.=	1783.2 KM.	SUN AZH=	88.3		
			N. W. PART OF LAC 74 RIPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD														
L 2	1	112	3.26N	11.68W	79	***	131712	11-22-66	LUNAR ORB HI. 610MM B&W	-	NONE	42K	68852	150	.2	16	-.00
			CAM.NAD.=	3.27N	11.68W	SWING=	327.	PHASE=	75.	EMIS.ANG.=	0.	CAM.RAD.=	1781.2 KM.	SUN AZH=	91.3		
			S. E. PART OF LAC 58 COPERNICUS, REINHOLD														

MIS	FR. PHOTO	PRIN. PT. ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN	SIDE.				
SION	ROLL	OR	#	TIME	H M SEC	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	F.D.				
#	#	MAIN		(ESTIMATED)		TYPE		M=N.M.I	PT.		FR.	LAP				
		#	LONG.					K=KM.			VERT	%				
L 2	2	112	3.20N	11.67W	79 ***	0000	131712 11-22-66 LUNAR ORB LO.F=80MM B&W	-	NONE	42K	525000	119	1.16	-	0.00	
			CAM. RAD.= 3.26N	11.67W	SWING= 287.	PHASE= 75.	EMIS.ANG.= 0.			CAM. RAD.= 1781.2 KM.	SUN AZM= 91.3					
				S. E. PART OF	LAC 58 COPERNICUS, REINHOLD											
L 2	1	137	4.90N	27.21W	83 ***	0000	030715 11-23-66 LUNAR ORB HI. 610MM B&W	-	NONE	51K	83607	283	1.3	7	-	0.00
			CAM. RAD.= 4.89N	27.18W	SWING= 92.	PHASE= 82.	EMIS.ANG.= 1.			CAM. RAD.= 1790.2 KM.	SUN AZM= 91.0					
				S. W. PART OF	LAC 58 COPERNICUS, REINHOLD											
L 2	2	137	4.90N	27.21W	83 ***	0000	030915 11-23-66 LUNAR ORB LO.F=80MM B&W	-	NONE	51K	637500	288	1.3	7	-	0.00
			CAM. RAD.= 4.89N	27.17W	SWING= 97.	PHASE= 82.	EMIS.ANG.= 1.			CAM. RAD.= 1790.2 KM.	SUN AZM= 91.0					
				S. W. PART OF	LAC 58 COPERNICUS, REINHOLD											
L 2	1	138	1.25N	13.27W	85 ***	0000	101115 11-23-66 LUNAR ORB HI. 610MM B&W	-	NONE	44K	72131	83	1.1	25	-	0.00
			CAM. RAD.= 1.25N	13.29W	SWING= 252.	PHASE= 67.	EMIS.ANG.= 1.			CAM. RAD.= 1783.2 KM.	SUN AZM= 91.0					
				S. E. PART OF	LAC 58 COPERNICUS, REINHOLD											
L 2	2	138	1.25N	13.26W	85 ***	0000	101115 11-23-66 LUNAR ORB LO.F=80MM B&W	-	NONE	44K	550000	79	1.2	25	-	0.00
			CAM. RAD.= 1.24N	13.29W	SWING= 247.	PHASE= 67.	EMIS.ANG.= 1.			CAM. RAD.= 1783.2 KM.	SUN AZM= 91.0					
				S. E. PART OF	LAC 58 COPERNICUS, REINHOLD											
L 2	1	139	1.22N	13.14W	85 ***	0000	101117 11-23-66 LUNAR ORB HI. 610MM B&W	-	NONE	44K	72131	85	1.2	25	-	0.5
			CAM. RAD.= 1.22N	13.18W	SWING= 254.	PHASE= 67.	EMIS.ANG.= 1.			CAM. RAD.= 1783.2 KM.	SUN AZM= 91.0					
				S. E. PART OF	LAC 58 COPERNICUS, REINHOLD											
L 2	2	139	1.42N	13.14W	85 ***	0000	101117 11-23-66 LUNAR ORB LO.F=80MM B&W	-	NONE	44K	550000	81	1.3	25	-	0.87
			CAM. RAD.= 1.42N	13.17W	SWING= 249.	PHASE= 67.	EMIS.ANG.= 1.			CAM. RAD.= 1783.2 KM.	SUN AZM= 91.0					
				S. E. PART OF	LAC 58 COPERNICUS, REINHOLD											
L 2	1	140	1.20N	13.02W	85 ***	0000	101119 11-23-66 LUNAR ORB HI. 610MM B&W	-	NONE	45K	73770	87	1.4	25	-	0.5
			CAM. RAD.= 1.19N	13.06W	SWING= 255.	PHASE= 67.	EMIS.ANG.= 1.			CAM. RAD.= 1784.2 KM.	SUN AZM= 91.0					
				S. E. PART OF	LAC 58 COPERNICUS, REINHOLD											
L 2	2	140	1.20N	13.01W	85 ***	0000	101119 11-23-66 LUNAR ORB LO.F=80MM B&W	-	NONE	45K	562500	83	1.4	25	-	0.87
			CAM. RAD.= 1.19N	13.05W	SWING= 251.	PHASE= 67.	EMIS.ANG.= 1.			CAM. RAD.= 1784.2 KM.	SUN AZM= 91.0					
				S. E. PART OF	LAC 58 COPERNICUS, REINHOLD											
L 2	1	141	1.17N	12.96W	85 ***	0000	101121 11-23-66 LUNAR ORB HI. 610MM B&W	-	NONE	45K	73770	88	1.5	25	-	0.5
			CAM. RAD.= 1.17N	12.94W	SWING= 256.	PHASE= 67.	EMIS.ANG.= 1.			CAM. RAD.= 1784.2 KM.	SUN AZM= 91.0					
				S. E. PART OF	LAC 58 COPERNICUS, REINHOLD											
L 2	2	141	1.17N	12.89W	85 ***	0000	101121 11-23-66 LUNAR ORB LO.F=80MM B&W	-	NONE	45K	562500	84	1.5	25	-	0.87
			CAM. RAD.= 1.17N	12.93W	SWING= 252.	PHASE= 67.	EMIS.ANG.= 2.			CAM. RAD.= 1784.2 KM.	SUN AZM= 91.0					
				S. E. PART OF	LAC 58 COPERNICUS, REINHOLD											
L 2	1	142	1.14N	12.77W	85 ***	0000	101123 11-23-66 LUNAR ORB HI. 610MM B&W	-	NONE	45K	73770	89	1.6	25	-	0.5
			CAM. RAD.= 1.14N	12.82W	SWING= 257.	PHASE= 67.	EMIS.ANG.= 2.			CAM. RAD.= 1784.2 KM.	SUN AZM= 91.0					
				S. E. PART OF	LAC 58 COPERNICUS, REINHOLD											

MIS SION	NAG HULL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB N	GET TIMES-HR (ESTIMATED)	GMI M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	T AZ	L ANG.	T ANG.	SUN FR.	SIDE. FWD. LAP S. R
L 2	2	142	1.15N CAM.NAD.= 1.14N	12.77W 12.81W	85 *** SWING= 254.	****	101123 11-23-66	LUNAR ORB LO.F=80MM B&W PHASE= 67. EMIS.ANG.= 2.	- NONE CAM.RAD.=	45K 1784.2 KM.	562500	85 SUN	1.7 AZM= 91.0	25	-0.87	
								S. E. PART OF LAC 58 COPERNICUS,REINHOLD								
L 2	1	143	1.12N CAM.NAD.= 1.12N	12.65W 12.69W	85 *** SWING= 258.	****	101125 11-23-66	LUNAR ORB HI. 610MM B&W PHASE= 67. EMIS.ANG.= 2.	- NONE CAM.RAD.=	45K 1784.2 KM.	73770	90 SUN	1.7 AZM= 90.9	25	-0.5	
								S. E. PART OF LAC 58 COPERNICUS,REINHOLD								
L 2	2	143	1.12N CAM.NAD.= 1.12N	12.64W 12.69W	85 *** SWING= 255.	****	101125 11-23-66	LUNAR ORB LO.F=80MM B&W PHASE= 67. EMIS.ANG.= 2.	- NONE CAM.RAD.=	45K 1784.2 KM.	562500	86 SUN	1.8 AZM= 90.9	25	-0.87	
								S. E. PART OF LAC 58 COPERNICUS,REINHOLD								
L 2	1	144	1.09N CAM.NAD.= 1.09N	12.53W 12.57W	85 *** SWING= 259.	****	101127 11-23-66	LUNAR ORB HI. 610MM B&W PHASE= 67. EMIS.ANG.= 2.	- NONE CAM.RAD.=	45K 1784.2 KM.	73770	91 SUN	1.8 AZM= 90.9	25	-0.5	
								S. E. PART OF LAC 58 COPERNICUS,REINHOLD								
L 2	2	144	1.09N CAM.NAD.= 1.09N	12.52W 12.57W	85 *** SWING= 256.	****	101127 11-23-66	LUNAR ORB LO.F=80MM B&W PHASE= 67. EMIS.ANG.= 2.	- NONE CAM.RAD.=	45K 1784.2 KM.	562500	87 SUN	1.9 AZM= 90.9	25	-0.87	
								S. E. PART OF LAC 58 COPERNICUS,REINHOLD								
L 2	1	145	1.06N CAM.NAD.= 1.07N	12.40W 12.45W	85 *** SWING= 260.	****	101129 11-23-66	LUNAR ORB HI. 610MM B&W PHASE= 67. EMIS.ANG.= 2.	- NONE CAM.RAD.=	45K 1784.2 KM.	73770	91 SUN	2.0 AZM= 90.9	25	-0.5	
								S. E. PART OF LAC 58 COPERNICUS,REINHOLD								
L 2	2	145	1.07N CAM.NAD.= 1.06N	12.39W 12.44W	85 *** SWING= 257.	****	101129 11-23-66	LUNAR ORB LO.F=80MM B&W PHASE= 67. EMIS.ANG.= 2.	- NONE CAM.RAD.=	45K 1784.2 KM.	562500	88 SUN	2.0 AZM= 90.9	25	-0.87	
								S. E. PART OF LAC 58 COPERNICUS,REINHOLD								
L 2	1	146	3.77N CAM.NAD.= 3.77N	27.49W 27.47W	86 *** SWING= 84.	****	133625 11-23-66	LUNAR ORB HI. 610MM B&W PHASE= 77. EMIS.ANG.= 1.	- NONE CAM.RAD.=	45K 1784.2 KM.	73770	275 SUN	.9 AZM= 91.2	12	-0.00	
								S. W. PART OF LAC 58 COPERNICUS,REINHOLD								
L 2	2	146	3.77N CAM.NAD.= 3.76N	27.49W 27.46W	86 *** SWING= 91.	****	133625 11-23-66	LUNAR ORB LO.F=80MM B&W PHASE= 77. EMIS.ANG.= 1.	- NONE CAM.RAD.=	45K 1784.2 KM.	562500	282 SUN	.9 AZM= 91.2	12	-0.00	
								S. W. PART OF LAC 58 COPERNICUS,REINHOLD								
L 2	1	147	3.74N CAM.NAD.= 3.74N	27.37W 27.35W	86 *** SWING= 83.	****	133627 11-23-66	LUNAR ORB HI. 610MM B&W PHASE= 77. EMIS.ANG.= 1.	- NONE CAM.RAD.=	45K 1784.2 KM.	73770	274 SUN	.8 AZM= 91.2	12	-0.6	
								S. W. PART OF LAC 58 COPERNICUS,REINHOLD								
L 2	2	147	3.74N CAM.NAD.= 3.74N	27.36W 27.34W	86 *** SWING= 91.	****	133627 11-23-66	LUNAR ORB LO.F=80MM B&W PHASE= 77. EMIS.ANG.= 1.	- NONE CAM.RAD.=	45K 1784.2 KM.	562500	282 SUN	.8 AZM= 91.2	12	-0.87	
								S. W. PART OF LAC 58 COPERNICUS,REINHOLD								
L 2	1	148	3.72N CAM.NAD.= 3.72N	27.25W 27.23W	86 *** SWING= 82.	****	133629 11-23-66	LUNAR ORB HI. 610MM B&W PHASE= 77. EMIS.ANG.= 1.	- NONE CAM.RAD.=	45K 1784.2 KM.	73770	273 SUN	.7 AZM= 91.2	12	-0.6	
								S. W. PART OF LAC 58 COPERNICUS,REINHOLD								

MIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTITUDE SCALE AT	TILT	SUN SIDE.				
SIGN	ROLL	OR	LAT.	N	TIMES-HR	M SEC		SENSOR	AND FILTER	ITUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	MAIN	LONG.		(ESTIMATED)			TYPE		M-N:M:	PT.		FR.	VER1	LAP	
										K-KM.					S. R	
L 2	2	148	3.72N	27.24W	86	000	0000	133629	11-23-66 LUNAR ORB LO.F=80MM B&W	-	NONE	45K	562500	283	06 12	-0.87
		CAM-HEAD=	3.72N	27.22W				SWING= 91.	PHASE= 77.	EMIS-ANG.= 1.	CAM-RAD.=	1784.2	KM.	SUN	AZM= 91.2	
				S. W. PART OF				LAC 58	COPERNICUS, REINHOLD							
L 2	1	149	3.69N	27.13W	86	000	0000	133631	11-23-66 LUNAR ORB HI. 610MM B&W	-	NONE	45K	73770	271	06 12	-0.6
		CAM-HEAD=	3.69N	27.11W				SWING= 80.	PHASE= 77.	EMIS-ANG.= 1.	CAM-RAD.=	1784.2	KM.	SUN	AZM= 91.2	
				S. W. PART OF				LAC 58	COPERNICUS, REINHOLD							
L 2	2	149	3.71N	27.12W	86	000	0000	133631	11-23-66 LUNAR ORB LO.F=80MM B&W	-	NONE	45K	562500	283	05 12	-0.87
		CAM-HEAD=	3.69N	27.10W				SWING= 92.	PHASE= 77.	EMIS-ANG.= 1.	CAM-RAD.=	1784.2	KM.	SUN	AZM= 91.2	
				S. W. PART OF				LAC 58	COPERNICUS, REINHOLD							
L 2	1	150	3.67N	27.00W	86	000	0000	133633	11-23-66 LUNAR ORB HI. 610MM B&W	-	NONE	45K	73770	269	04 13	-0.6
		CAM-HEAD=	3.67N	26.99W				SWING= 77.	PHASE= 77.	EMIS-ANG.= 1.	CAM-RAD.=	1784.2	KM.	SUN	AZM= 91.2	
				S. W. PART OF				LAC 58	COPERNICUS, REINHOLD							
L 2	2	150	3.67N	26.99W	86	000	0000	133633	11-23-66 LUNAR ORB LO.F=80MM B&W	-	NONE	45K	562500	284	04 13	-0.87
		CAM-HEAD=	3.67N	26.98W				SWING= 92.	PHASE= 77.	EMIS-ANG.= 0.	CAM-RAD.=	1784.2	KM.	SUN	AZM= 91.2	
				S. W. PART OF				LAC 58	COPERNICUS, REINHOLD							
L 2	1	151	3.64N	26.88W	86	000	0000	133635	11-23-66 LUNAR ORB HI. 610MM B&W	-	NONE	45K	73770	264	03 13	-0.6
		CAM-HEAD=	3.65N	26.87W				SWING= 73.	PHASE= 77.	EMIS-ANG.= 0.	CAM-RAD.=	1784.2	KM.	SUN	AZM= 91.2	
				S. W. PART OF				LAC 58	COPERNICUS, REINHOLD							
L 2	2	151	3.65N	26.87W	86	000	0000	133635	11-23-66 LUNAR ORB LO.F=80MM B&W	-	NONE	45K	562500	285	03 13	-0.87
		CAM-HEAD=	3.64N	26.87W				SWING= 93.	PHASE= 77.	EMIS-ANG.= 0.	CAM-RAD.=	1784.2	KM.	SUN	AZM= 91.2	
				S. W. PART OF				LAC 58	COPERNICUS, REINHOLD							
L 2	1	152	3.62N	26.76W	86	000	0000	133637	11-23-66 LUNAR ORB HI. 610MM B&W	-	NONE	45K	73770	255	02 13	-0.6
		CAM-HEAD=	3.62N	26.75W				SWING= 63.	PHASE= 77.	EMIS-ANG.= 0.	CAM-RAD.=	1784.2	KM.	SUN	AZM= 91.2	
				S. W. PART OF				LAC 58	COPERNICUS, REINHOLD							
L 2	2	152	3.62N	26.75W	86	000	0000	133637	11-23-66 LUNAR ORB LO.F=80MM B&W	-	NONE	44K	550000	288	02 13	-0.87
		CAM-HEAD=	3.62N	26.75W				SWING= 96.	PHASE= 77.	EMIS-ANG.= 0.	CAM-RAD.=	1783.2	KM.	SUN	AZM= 91.2	
				S. W. PART OF				LAC 58	COPERNICUS, REINHOLD							
L 2	1	153	3.60N	26.64W	86	000	0000	133639	11-23-66 LUNAR ORB HI. 610MM B&W	-	NONE	44K	72131	228	01 13	-0.6
		CAM-HEAD=	3.60N	26.64W				SWING= 36.	PHASE= 77.	EMIS-ANG.= 0.	CAM-RAD.=	1783.2	KM.	SUN	AZM= 91.2	
				S. W. PART OF				LAC 58	COPERNICUS, REINHOLD							
L 2	2	153	3.60N	26.63W	86	000	0000	133639	11-23-66 LUNAR ORB LO.F=80MM B&W	-	NONE	44K	550000	309	01 13	-0.87
		CAM-HEAD=	3.60N	26.63W				SWING= 117.	PHASE= 77.	EMIS-ANG.= 0.	CAM-RAD.=	1783.2	KM.	SUN	AZM= 91.2	
				S. W. PART OF				LAC 58	COPERNICUS, REINHOLD							
L 2	1	154	3.38N	27.48W	87	000	0000	170530	11-23-66 LUNAR ORB HI. 610MM B&W	-	NONE	44K	72131	282	06 14	-0.00
		CAM-HEAD=	3.37N	27.46W				SWING= 90.	PHASE= 76.	EMIS-ANG.= 1.	CAM-RAD.=	1783.2	KM.	SUN	AZM= 91.2	
				S. W. PART OF				LAC 58	COPERNICUS, REINHOLD							

MIS SION	MAG #	FR, PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB N	GLT TIMES-HR (ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N, HI K=KM.	SCALE AT PRIN. PT.	T I L T AZ	SUN ANG. FR. VERT	SIDE FWD. LAP R. R
L 2	2	154	3.38N 3.37N	27.47W 27.46W	87 ***	0000	170530	11-23-66 LUNAR ORB LO.F=80MM B&W PHASE= 76. EMIS.ANG.= 1.	- NONE CAM.RAD.=	44K 1783.2 KM.	550000	293	.6 14 SUN AZM= 91.2	-.00
								SWING= 102. S. W. PART OF LAC 58 COPERNICUS, REINHOLD						
L 2	1	155	3.35N 3.35N	27.36W 27.35W	87 ***	0000	170532	11-23-66 LUNAR ORB HI. 610MM B&W PHASE= 76. EMIS.ANG.= 1.	- NONE CAM.RAD.=	44K 1783.2 KM.	72131	292	.5 14 SUN AZM= 91.2	-.00
								SWING= 90. S. W. PART OF LAC 58 COPERNICUS, REINHOLD						
L 2	2	155	3.35N 3.35N	27.35W 27.34W	87 ***	0000	170532	11-23-66 LUNAR ORB LO.F=80MM B&W PHASE= 76. EMIS.ANG.= 1.	- NONE CAM.RAD.=	44K 1783.2 KM.	550000	296	.5 14 SUN AZM= 91.2	-.88
								SWING= 105. S. W. PART OF LAC 58 COPERNICUS, REINHOLD						
L 2	1	156	3.33N 3.33N	27.24W 27.23W	87 ***	0000	170534	11-23-66 LUNAR ORB HI. 610MM B&W PHASE= 76. EMIS.ANG.= 0.	- NONE CAM.RAD.=	44K 1783.2 KM.	72131	282	.4 14 SUN AZM= 91.2	-.07
								SWING= 90. S. W. PART OF LAC 58 COPERNICUS, REINHOLD						
L 2	2	156	3.33N 3.32N	27.23W 27.22W	87 ***	0000	170534	11-23-66 LUNAR ORB LO.F=80MM B&W PHASE= 76. EMIS.ANG.= 0.	- NONE CAM.RAD.=	44K 1783.2 KM.	550000	302	.3 14 SUN AZM= 91.2	-.87
								SWING= 110. S. W. PART OF LAC 58 COPERNICUS, REINHOLD						
L 2	1	157	3.30N 3.30N	27.12W 27.12W	87 ***	0000	170536	11-23-66 LUNAR ORB HI. 610MM B&W PHASE= 76. EMIS.ANG.= 0.	- NONE CAM.RAD.=	44K 1783.2 KM.	72131	282	.2 14 SUN AZM= 91.2	-.07
								SWING= 91. S. W. PART OF LAC 58 COPERNICUS, REINHOLD						
L 2	2	157	3.30N 3.30N	27.11W 27.11W	87 ***	0000	170536	11-23-66 LUNAR ORB LO.F=80MM B&W PHASE= 76. EMIS.ANG.= 0.	- NONE CAM.RAD.=	44K 1783.2 KM.	550000	312	.2 14 SUN AZM= 91.2	-.87
								SWING= 121. S. W. PART OF LAC 58 COPERNICUS, REINHOLD						
L 2	1	158	3.28N 3.28N	27.00W 27.00W	87 ***	0000	170538	11-23-66 LUNAR ORB HI. 610MM B&W PHASE= 76. EMIS.ANG.= 0.	- NONE CAM.RAD.=	44K 1783.2 KM.	72131	283	.1 14 SUN AZM= 91.2	-.05
								SWING= 92. S. W. PART OF LAC 58 COPERNICUS, REINHOLD						
L 2	2	158	3.28N 3.28N	26.99W 26.99W	87 ***	0000	170538	11-23-66 LUNAR ORB LO.F=80MM B&W PHASE= 76. EMIS.ANG.= 0.	- NONE CAM.RAD.=	44K 1783.2 KM.	550000	337	.1 14 SUN AZM= 91.2	-.87
								SWING= 146. S. W. PART OF LAC 58 COPERNICUS, REINHOLD						
L 2	1	159	3.25N 3.25N	26.88W 26.88W	87 ***	0000	170540	11-23-66 LUNAR ORB HI. 610MM B&W PHASE= 76. EMIS.ANG.= 0.	- NONE CAM.RAD.=	44K 1783.2 KM.	72131	58	.1 14 SUN AZM= 91.2	-.05
								SWING= 227. S. W. PART OF LAC 58 COPERNICUS, REINHOLD						
L 2	2	159	3.25N 3.25N	26.87W 26.87W	87 ***	0000	170540	11-23-66 LUNAR ORB LO.F=80MM B&W PHASE= 76. EMIS.ANG.= 0.	- NONE CAM.RAD.=	44K 1783.2 KM.	550000	30	.1 14 SUN AZM= 91.2	-.87
								SWING= 199. S. W. PART OF LAC 58 COPERNICUS, REINHOLD						
L 2	1	160	3.23N 3.23N	26.76W 26.76W	87 ***	0000	170541	11-23-66 LUNAR ORB HI. 610MM B&W PHASE= 76. EMIS.ANG.= 0.	- NONE CAM.RAD.=	44K 1783.2 KM.	72131	99	.1 15 SUN AZM= 91.2	-.04
								SWING= 267. S. W. PART OF LAC 58 COPERNICUS, REINHOLD						

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



HIS	MAJ	FR. PHOTO	PRIN. LAT.	PT. * LONG.	ORB	GET TIMES	GHT -HR M SEC	M-DA-YR (ESTIMATED)	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT. SCALE AT TUDE M=N,MI K=KM.	SCALE AT PRIN. PT.	T AZ	L ANG.	T ANG.	SUN FWD.	SIDE. LAP	
L 2	2	166	0.09N	19.67W	91	000	0000	070357	11-24-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	52K	650000	103	1.8 29	-0.87
CAM.NAD.= 0.09N 19.72W SWING= 271. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.5																		
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAEUS MT, FRAU MAURO																		
L 2	1	167	0.05N	19.53W	91	000	0000	070359	11-24-66	LUNAR	ORB HI. 610MM B&W	-	NONE	52K	85246	106	1.9 29	-0.5
CAM.NAD.= 0.07N 19.59W SWING= 274. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.5																		
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAEUS MT, FRAU MAURO																		
L 2	2	167	0.06N	19.52W	91	000	0000	070359	11-24-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	52K	650000	103	1.9 29	-0.87
CAM.NAD.= 0.07N 19.58W SWING= 271. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.5																		
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAEUS MT, FRAU MAURO																		
L 2	1	168	0.02N	19.39W	91	000	0000	070402	11-24-66	LUNAR	ORB HI. 610MM B&W	-	NONE	52K	85246	106	2.0 29	-0.5
CAM.NAD.= 0.04N 19.45W SWING= 274. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.5																		
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAEUS MT, FRAU MAURO																		
L 2	2	168	0.03N	19.38W	91	000	0000	070402	11-24-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	52K	650000	103	2.1 29	-0.87
CAM.NAD.= 0.04N 19.44W SWING= 271. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.5																		
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAEUS MT, FRAU MAURO																		
L 2	1	169	0.01S	19.25W	91	000	0000	070404	11-24-66	LUNAR	ORB HI. 610MM B&W	-	NONE	52K	85246	106	2.2 29	-0.5
CAM.NAD.= 0.01N 19.31W SWING= 274. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.5																		
NORTHERN PART OF LAC 76 RIPHAEUS MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																		
L 2	2	169	0.00S	19.24W	91	000	0000	070404	11-24-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	52K	650000	103	2.2 29	-0.87
CAM.NAD.= 0.01N 19.30W SWING= 271. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.5																		
NORTHERN PART OF LAC 76 RIPHAEUS MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																		
L	1	170	0.04S	19.10W	91	000	0000	070406	11-24-66	LUNAR	ORB HI. 610MM B&W	-	NONE	52K	85246	106	2.3 29	-0.4
CAM.NAD.= 0.02S 19.17W SWING= 274. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.4																		
NORTHERN PART OF LAC 76 RIPHAEUS MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																		
L 2	2	170	0.03S	19.09W	91	000	0000	070406	11-24-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	52K	650000	103	2.3 29	-0.87
CAM.NAD.= 0.02S 19.16W SWING= 271. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.4																		
NORTHERN PART OF LAC 76 RIPHAEUS MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																		
L 2	2	171	0.23S	20.10W	92	000	0000	103255	11-24-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	54K	675000	100	2.0 30	-0.00
CAM.NAD.= 0.22S 20.16W SWING= 269. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1793.2 KM. SUN AZM= 90.3																		
NORTHERN PART OF LAC 76 RIPHAEUS MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																		
L 2	2	172	0.27S	19.95W	92	000	0000	103257	11-24-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	54K	675000	100	2.1 30	-0.87
CAM.NAD.= 0.25S 20.01W SWING= 269. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1793.2 KM. SUN AZM= 90.3																		
NORTHERN PART OF LAC 76 RIPHAEUS MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																		
L 2	2	173	0.36S	19.80W	92	000	0000	103259	11-24-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	55K	687500	101	2.3 30	-0.87
CAM.NAD.= 0.28S 19.87W SWING= 269. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1794.2 KM. SUN AZM= 90.3																		
NORTHERN PART OF LAC 76 RIPHAEUS MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																		

MIS SION	MAG #	FR, PHOTO OR	PRIN, PT. LAT.	ORB #	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN.	AT PT.	T I AZ	L T ANG.	SUN ANG.	SIDE, F&D. LAP S. S	
																	MAIN
L 2	2	174	0.335	19.64W	92	000	0000	103302	11-24-66	LUNAR ORB LO.F=80MM B&W	-	NONE	55K	687500	101	2.4 31	-.87
CAM-NAD.= .31S 19.72W SWING= 269. PHASE= 62. EMIS-ANG.= 3. CAM-RAD.= 1794.2 KM. SUN AZM= 90.3																	
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 2	2	175	0.365	19.49W	92	000	0000	103304	11-24-66	LUNAR ORB LO.F=80MM B&W	-	NONE	55K	687500	101	2.6 31	-.87
CAM-NAD.= .34S 19.57W SWING= 269. PHASE= 62. EMIS-ANG.= 3. CAM-RAD.= 1794.2 KM. SUN AZM= 90.3																	
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 2	2	176	0.395	19.34W	92	000	0000	103307	11-24-66	LUNAR ORB LO.F=80MM B&W	-	NONE	56K	700000	101	2.7 31	-.87
CAM-NAD.= .38S 19.42W SWING= 269. PHASE= 62. EMIS-ANG.= 3. CAM-RAD.= 1795.2 KM. SUN AZM= 90.2																	
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 2	2	177	0.435	19.18W	92	000	0000	103309	11-24-66	LUNAR ORB LO.F=80MM B&W	-	NONE	56K	700000	101	2.9 31	-.87
CAM-NAD.= .41S 19.27W SWING= 269. PHASE= 62. EMIS-ANG.= 3. CAM-RAD.= 1795.2 KM. SUN AZM= 90.2																	
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 2	2	178	0.465	19.03W	92	000	0000	103312	11-24-66	LUNAR ORB LO.F=80MM B&W	-	NONE	56K	700000	101	3.0 31	-.87
CAM-NAD.= .44S 19.12W SWING= 269. PHASE= 62. EMIS-ANG.= 3. CAM-RAD.= 1795.2 KM. SUN AZM= 90.2																	
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 3	2	120	0.735	19.50W	74	000	0000	101835	2-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	45K	562500	258	46.2 13	-.00
CAM-NAD.= .03N 19.92W SWING= 27. PHASE= 15. EMIS-ANG.= 70. CAM-RAD.= 1784.2 KM. SUN AZM= 91.3																	
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 3	1	122	1.07N	21.91W	75	000	0000	214557	2-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	48K	78649	202	17.4 12	-.00
CAM-NAD.= 1.54N 21.72W SWING= 1. PHASE= 72. EMIS-ANG.= 18. CAM-RAD.= 1787.2 KM. SUN AZM= 91.7																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 3	2	122	1.07N	21.90W	75	000	0000	214557	2-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	48K	600000	202	17.5 12	-.00
CAM-NAD.= 1.53N 21.71W SWING= 2. PHASE= 72. EMIS-ANG.= 18. CAM-RAD.= 1787.2 KM. SUN AZM= 91.7																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 3	1	123	7.67N	27.57W	76	000	0000	011317	2-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	54K	88525	360	46.9 8	-.00
CAM-NAD.= 3.08N 27.59W SWING= 169. PHASE= 85. EMIS-ANG.= 71. CAM-RAD.= 1793.2 KM. SUN AZM= 92.5																	
WESTERN PART OF LAC 58 COPERNICUS, REINHOLD & LIMB OR HORIZON																	
L 3	2	123	7.68N	27.57W	76	000	0000	011318	2-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	54K	675000	360	46.9 8	-.00
CAM-NAD.= 3.08N 27.58W SWING= 169. PHASE= 85. EMIS-ANG.= 72. CAM-RAD.= 1793.2 KM. SUN AZM= 92.5																	
WESTERN PART OF LAC 58 COPERNICUS, REINHOLD & LIMB OR HORIZON																	
L 3	2	124	0.625	20.09W	77	000	0000	044432	2-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	46K	575000	248	.3 17	-.00
CAM-NAD.= .62S 20.09W SWING= 47. PHASE= 72. EMIS-ANG.= 0. CAM-RAD.= 1785.2 KM. SUN AZM= 91.3																	
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 3	2	125	0.675	19.97W	77	000	0000	044434	2-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	46K	575000	220	.2 17	-.87
CAM-NAD.= .67S 19.97W SWING= 20. PHASE= 72. EMIS-ANG.= 0. CAM-RAD.= 1785.2 KM. SUN AZM= 91.3																	
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	

SUN	HAG	FR.	PHOTO	PRIN.	PI.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	I	L	Y	SUN	SIDE,
#	#		MAIN		LONG.		(ESTIMATED)			TYPE		K=KM.	M=N.M!	PT.					FR.	LAP
L 4	2	102	12.96N	3.63E	19	***	054527	5-18-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	2699K	33737500	237	1.1	27	-15		
			CAM.NAD.= 13.89N	5.14E			SWING= 53.		PHASE= 66.	EMIS.ANG.= 3.		CAM.RAD.= 4438.2 KM.						SUN AZM= 94.7		
			LAC 59 M.VAPORUM, HYGINUS				: 1/4 MOON SPHERE											LAC 112 TYCHO, STOFL		
L 4	2	104	70.35N	18.10E	19	***	065708	5-18-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	3428K	42850000	153	0.8	12	-00		
			CAM.NAD.= 71.87N	15.88E			SWING= 330.		PHASE= 80.	EMIS.ANG.= 3.		CAM.RAD.= 5167.2 KM.						SUN AZM= 125.4		
			LAC 4 MELTON, DESITTER				: 1/4 MOON SPHERE											LAC 16		
L 4	1	113	14.64S	9.51W	21	***	051900	5-19-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2718K	4455738	173	0.7	20	-47		
			CAM.NAD.= 14.45S	9.81W			SWING= 310.		PHASE= 70.	EMIS.ANG.= 1.		CAM.RAD.= 4457.2 KM.						SUN AZM= 83.9		
			LAC 77 PIOLMAEUS, LAC 76 RIPHAEUS M; LAC 95 PURBACH, AR; LAC 94 PITATUS, M. NUBIUM															LAC 58 COPERNICUS, RE		
L 4	1	114	13.46N	10.97W	21	***	054938	5-19-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2 87K	4404918	261	1.8	19	-4		
			CAM.NAD.= 13.89N	8.09W			SWING= 77.		PHASE= 66.	EMIS.ANG.= 5.		CAM.RAD.= 4426.2 KM.						SUN AZM= 94.2		
			LAC 58 COPERNICUS, REINHOLD				: 1/2 MOON SPHERE											LAC 40 TIMOCHARIS, L		
L 4	2	114	13.47N	10.97W	21	***	054938	5-19-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	2687K	33587500	241	1.8	19	-64		
			CAM.NAD.= 13.89N	8.09W			SWING= 77.		PHASE= 66.	EMIS.ANG.= 5.		CAM.RAD.= 4426.2 KM.						SUN AZM= 94.2		
			LAC 58 COPERNICUS, REINHOLD				: 1/2 MOON SPHERE											LAC 12 PLATO, ALP; LAC 26 EUDOX; LAC 96 ALTAI		
L 4	2	119	42.78S	7.44W	22	***	164855	5-19-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	2991K	37387500	97	4.8	20	-00		
			CAM.NAD.= 42.26S	18.74W			SWING= 295.		PHASE= 82.	EMIS.ANG.= 13.		CAM.RAD.= 4730.2 KM.						SUN AZM= 69.1		
			LAC 112 TYCHO, STOFLER				: 1/2 MOON SPHERE											LAC 58 COPERNICUS, R		
L 4	1	120	14.29S	15.64W	22	***	172107	5-19-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2718K	4455738	77	0.5	20	-49		
			CAM.NAD.= 14.46S	16.43W			SWING= 263.		PHASE= 71.	EMIS.ANG.= 1.		CAM.RAD.= 4457.2 KM.						SUN AZM= 84.0		
			EASTERN PART OF LAC 76 RIPHAEUS M; EASTERN PART OF LAC 94 PITATUS, M.; LAC 95 PURBACH, ARZACHEL															LAC 58 COPERNICUS, RE		
L 4	1	121	13.81N	16.80W	22	***	175143	5-19-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2682K	4396721	268	1.3	20	-10		
			CAM.NAD.= 13.87N	14.69W			SWING= 83.		PHASE= 67.	EMIS.ANG.= 3.		CAM.RAD.= 4421.2 KM.						SUN AZM= 94.4		
			EASTERN PART OF LAC 58 COPERNICUS, REINHOLD				: EASTERN PART OF LAC 40 TIMOCHARIS & NORTHERN PART OF LAC 76 RIPHAEUS MT,													
L 4	2	121	13.81N	16.80W	22	***	175143	5-19-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	2682K	33525000	268	1.3	20	-66		
			CAM.NAD.= 13.87N	14.69W			SWING= 83.		PHASE= 67.	EMIS.ANG.= 3.		CAM.RAD.= 4421.2 KM.						SUN AZM= 94.4		
			LAC 58 COPERNICUS, REINHOLD				: 1/2 MOON SPHERE											LAC 96 ALTAI SCA; LAC 11 J.HER & LAC 27 GEMIN		
L 4	1	125	14.89S	22.97W	23	***	052313	5-20-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2717K	4454098	170	0.3	19	-44		
			CAM.NAD.= 14.40S	23.06W			SWING= 356.		PHASE= 71.	EMIS.ANG.= 1.		CAM.RAD.= 4456.2 KM.						SUN AZM= 84.2		
			WESTERN PART OF LAC 76 RIPHAEUS MT, FKAU MAURO				: CENTRAL PART OF LAC 94 PITATUS, M. & S. W. PART OF LAC 58 COPERNICUS, R													
L 4	1	126	12.86N	23.05W	23	***	055348	5-20-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2477K	4388525	238	1.3	20	-36		
			CAM.NAD.= 13.93N	21.27W			SWING= 53.		PHASE= 68.	EMIS.ANG.= 3.		CAM.RAD.= 4416.2 KM.						SUN AZM= 94.0		
			WESTERN PART OF LAC 58 COPERNICUS, REINHOLD				: CENTRAL PART OF LAC 40 TIMOCHARIS & N. W. PART OF LAC 76 RIPHAEUS MT,													
L 4	2	126	12.87N	23.05W	23	***	055348	5-20-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	2477K	33462500	238	1.3	20	-00		
			CAM.NAD.= 13.94N	21.27W			SWING= 53.		PHASE= 68.	EMIS.ANG.= 3.		CAM.RAD.= 4416.2 KM.						SUN AZM= 94.0		
			LAC 58 COPERNICUS, REINHOLD				: 1/2 MOON SPHERE											LAC 111 WILHELM, ELGER, MEE & LAC 10 BABBAGE, N. PR		

MIS	MAG	FR, PHOBU	PRIN. PT.	ORB	GCT	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T I L T	SUN SIDE,
SUN ROLL	OR	LAT.	"	"	TIMES-HH M SEC	"	"	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
"	"	MAIN	LUNG.	"	(I=ESTIMATED)	"	"	TYPE	"	M=N, MI	PT.	FR.	LAP
"	"	"	"	"	"	"	"	"	"	K=KM.	"	VERT	S.
L 4	2	128	69.92N	9.43W	23	070417	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3369K	42112500	171 1.0 12 -.
CAM.NAD.= 71.9UN 10.32W SWING= 347. PHASE= 80. EMIS.ANG.= 3. CAM.RAD.= 5108.2 KM. SUN AZH=122.3													
LAC 3 PHILOLAUS, HARKUN ; >1/2 MOON SPHERE ; LAC 58 COPERNICUS, REINHOLD & LAC 17													
L 4	1	132	9.14S	29.59W	24	172507	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	2717K	4454098	1 3.4 19 -.50
CAM.NAD.= 14.42S 29.69W SWING= 188. PHASE= 72. EMIS.ANG.= 9. CAM.RAD.= 4456.2 KM. SUN AZH= 86.2													
LAC 76 RIPHAEUS MT. FRAU MAURO ; LAC 75 LEYKONNE, FLAHSO ; LAC 93 M. HUMOR, GASSFNDI ; LAC 94 PITATIUS, M. NU													
L 4	1	133	18.73N	29.69W	24	175540	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	2673K	4381967	340 3.0 19 -.46
CAM.NAD.= 13.91N 27.86W SWING= 156. PHASE= 68. EMIS.ANG.= 8. CAM.RAD.= 4412.2 KM. SUN AZH= 95.9													
WESTERN PART OF LAC 40 TIMOCHARIS, LAMBERT ; LAC 39 ARISTARCHUS & LAC 58 COPERNICUS, REINHOLD													
L 4	2	142	42.04S	33.37W	26	165605	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3007K	37587500	93 5.2 20 -.
CAM.NAD.= 42.14S 45.58W SWING= 291. PHASE= 84. EMIS.ANG.= 14. CAM.RAD.= 4746.2 KM. SUN AZH= 70.4													
LAC 111 WILHELM, ELGER, MEE ; LAC 144 SCOTT, S. POLF NEAR SIDE >6 LAC 56 HEVELIUS, REI													
L 4	2	148	42.94S	41.38W	27	045722	5-22-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3009K	37412500	99 4.6 18 -.
CAM.NAD.= 42.11S 52.33W SWING= 297. PHASE= 84. EMIS.ANG.= 13. CAM.RAD.= 4748.2 KM. SUN AZH= 71.6													
LAC 110 SCHICKARD, LACHOIX ; LAC 144 SCOTT, S. POLF NEAR SIDE >6 LAC 56 HEVELIUS, REI													
L 4	2	150	12.7UN	49.29W	27	060012	5-22-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2468K	33350000	234 1.3 18 -.11
CAM.NAD.= 13.91N 47.59W SWING= 48. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 4407.2 KM. SUN AZH= 93.5													
LAC 57 AEPLEK, ENC ; >1/2 MOON SPHERE ; LAC 92 BYRGIUS, DA ; LAC 11 J. HERSCHEL, JURAS, BOUGHER & LAC 58 COPERNICUS, RE													
L 4	2	151	40.8UN	40.2UN	27	063228	5-22-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2866K	35825000	118 2.4 21 -.
CAM.NAD.= 42.84N 44.74W SWING= 282. PHASE= 75. EMIS.ANG.= 6. CAM.RAD.= 4605.2 KM. SUN AZH=108.3													
LAC 23 KUNNER, SHA ; >1/2 MOON SPHERE ; LAC 74 GRIMALDI, R ; LAC 1 N. POLE NEAR SIDE BYRD, PEARLY >80 N & LAC 13 ARISTOTE., M. F													
L 4	2	161	15.13S	61.98W	29	053134	5-23-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2723K	34037500	129 .8 17 -.88
CAM.NAD.= 14.36S 62.94W SWING= 315. PHASE= 75. EMIS.ANG.= 2. CAM.RAD.= 4462.2 KM. SUN AZH= 84.7													
LAC 74 GRIMALDI, B ; >1/2 MOON SPHERE ; LAC 136 BAILLEY, K ; LAC 22 SE. GERARD, BUNSEN, HARDING & LAC 58 COPERNICUS, RE													
L 4	2	175	41.29N	66.78W	31	063541	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2872K	35900000	116 2.0 19 -.90
CAM.NAD.= 42.86N 70.79W SWING= 279. PHASE= 76. EMIS.ANG.= 5. CAM.RAD.= 4411.2 KM. SUN AZH=106.8													
LAC 22 SE. GERARD, BUNSEN, HARDING ; >1/2 MOON SPHERE ; LAC 73 RICCIOLI, NE. ORIENTAL & LAC 1 N. POLE NEAR SI													
L 4	2	183	43.53N	71.02W	32	183607	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2874K	35925000	79 2.8 20 -.90
CAM.NAD.= 42.84N 77.39W SWING= 242. PHASE= 77. EMIS.ANG.= 8. CAM.RAD.= 4613.2 KM. SUN AZH=108.9													
LAC 22 SE. GERARD, BUNSEN, HARDING ; >1/2 MOON SPHERE ; LAC 90 LOWELL & LAC 1 N. POLE NEAR SI													
L 5	1	133	11.5UN	10.76W	57	105416	8-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	103K	168852	271 11.2 18 -.
CAM.NAD.= 11.47N 10.07W SWING= 177. PHASE= 60. EMIS.ANG.= 12. CAM.RAD.= 1842.2 KM. SUN AZH= 92.2													
N. E. PART OF LAC 58 COPERNICUS, REINHOLD													
L 5	2	133	11.5UN	10.77W	57	105416	8-15-67	LUNAR ORB LO.F=80MM B&W	-	NONE	103	1287500	272 11.3 18 -.
CAM.NAD.= 11.48N 10.07W SWING= 178. PHASE= 60. EMIS.ANG.= 12. CAM.RAD.= 1842.2 KM. SUN AZH= 92.2													
N. E. PART OF LAC 58 COPERNICUS, REINHOLD & N. W. PART OF LAC 59 H. VAPORUM, HYGINUS													

MIS SION	MAG #	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR (I=ESTIMATED)	GMT H SEC	M-DA-YR	CAMERA-LENS ON SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE, ANG. ANG. FR. LAP VERT R, R
L 5	1	134	12.66N 10.67W	57	000	0000	105435	8-15-67 LUNAR ORB HI. 610MM B&W	- NONE	105K	172131	277	11.2 1R -... CAM. RAD.= 1844.2 KM. SUN AZM= 92.6
N. E. PART OF LAC 58 COPERNICUS, REINHOLD													
L 5	2	134	12.67N 10.68W	57	000	0000	105435	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	105K	1312500	277	11.3 1R -.51 CAM. RAD.= 184.2 KM. SUN AZM= 92.6
N. E. PART OF LAC 58 COPERNICUS, REINHOLD 6 N. W. PART OF LAC 59 M. VAPORUM, HYGINUS													
L 5	1	135	13.88N 10.58W	57	000	0000	105455	8-15-67 LUNAR ORB HI. 610MM B&W	- NONE	106K	173770	283	11.3 1R -... CAM. RAD.= 1845.2 KM. SUN AZM= 93.0
N. E. PART OF LAC 58 COPERNICUS, REINHOLD 6 N. W. PART OF LAC 59 M. VAPORUM, HYGINUS													
L 5	2	135	13.89N 10.59W	57	000	0000	105456	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	106K	1325000	283	11.4 1R -.49 CAM. RAD.= 1845.2 KM. SUN AZM= 93.0
N. E. PART OF LAC 58 COPERNICUS, REINHOLD 6 N. W. PART OF LAC 59 M. VAPORUM, HYGINUS													
L 5	1	136	15.15N 10.49W	57	000	0000	105516	8-15-67 LUNAR ORB HI. 610MM B&W	- NONE	108K	177049	289	11.5 1R -... CAM. RAD.= 1847.2 KM. SUN AZM= 93.5
N. E. PART OF LAC 58 COPERNICUS, REINHOLD 6 N. W. PART OF LAC 59 M. VAPORUM, HYGINUS													
L 5	2	136	15.16N 10.50W	57	000	0000	105517	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	108K	1350000	289	11.7 1R -.48 CAM. RAD.= 1847.2 KM. SUN AZM= 93.5
N. E. PART OF LAC 58 COPERNICUS, REINHOLD 6 N. W. PART OF LAC 59 M. VAPORUM, HYGINUS 1 LAC 40 TIMOCHARIS 6 LAC 41 AP													
L 5	1	137	6.63N 14.75W	59	000	0000	171450	8-15-67 LUNAR ORB HI. 610MM B&W	- NONE	100K	163934	277	13.4 17 -... CAM. RAD.= 1839.2 KM. SUN AZM= 90.5
S. E. PART OF LAC 58 COPERNICUS, REINHOLD													
L 5	2	137	6.63N 14.76W	59	000	0000	171450	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	100K	1250000	277	13.5 17 -... CAM. RAD.= 1839.2 KM. SUN AZM= 90.5
S. E. PART OF LAC 58 COPERNICUS, REINHOLD													
L 5	1	142	12.07N 16.41W	61	000	0000	233840	8-15-67 LUNAR ORB HI. 610MM B&W	- NONE	106K	173770	99	8.5 19 -... CAM. RAD.= 1845.2 KM. SUN AZM= 92.8
N. E. PART OF LAC 58 COPERNICUS, REINHOLD													
L 5	2	142	12.08N 16.42W	61	000	0000	233840	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	106K	1325000	99	8.3 19 -... CAM. RAD.= 1845.2 KM. SUN AZM= 92.8
N. E. PART OF LAC 58 COPERNICUS, REINHOLD													
L 5	1	143	13.85N 16.30W	61	000	0000	233900	8-15-67 LUNAR ORB HI. 610MM B&W	- NONE	107K	175410	91	8.5 19 -... CAM. RAD.= 1846.2 KM. SUN AZM= 93.2
N. E. PART OF LAC 58 COPERNICUS, REINHOLD													
L 5	2	143	13.86N 16.31W	61	000	0000	233900	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	107K	1337500	91	8.3 19 -.51 CAM. RAD.= 1846.2 KM. SUN AZM= 93.2
N. E. PART OF LAC 58 COPERNICUS, REINHOLD													

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR (ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE	SCALE AT PRIN. M=K.MI K=K.M.	T I L T AZ ANG.	SUN SIDE, ANG. FR. VERT	FWD. LAP X, Y
L 5	1	144	15.06N 16.19W	61	***	0000	233920	8-15-67 LUNAR ORB HI. 610MM B&W	- NONE	109K	178689	84	8.6 19	-.00
CAM. RAD. = 15.01N 16.75W SWING = 349. PHASE = 80. EMIS. ANG. = 9. CAM. RAD. = 1848.2 KM. SUN AZM = 93.6														
N. E. PART OF LAC 58 COPERNICUS, REINHOLD														
L 5	2	144	15.07N 16.19W	61	***	0000	233920	8-15-67 LUNAR ORB LO. F=80MM B&W	- NONE	109K	1362500	83	8.5 19	-.50
CAM. RAD. = 15.01N 16.75W SWING = 349. PHASE = 80. EMIS. ANG. = 9. CAM. RAD. = 1848.2 KM. SUN AZM = 93.6														
NORTHERN PART OF LAC 58 COPERNICUS, REINHOLD & SOUTHERN PART OF LAC 40 TIMOCHARIS, LAMBERT														
L 5	2	145	16.31N 16.08W	61	***	0000	233940	8-15-67 LUNAR ORB LO. F=80MM B&W	- NONE	111K	1387500	76	8.8 19	-.50
CAM. RAD. = 16.18N 16.65W SWING = 341. PHASE = 80. EMIS. ANG. = 9. CAM. RAD. = 1850.2 KM. SUN AZM = 94.1														
SOUTHERN PART OF LAC 40 TIMOCHARIS, LAMBERT & NORTHERN PART OF LAC 58 COPERNICUS, REINHOLD														
L 5	1	146	6.93N 18.27W	62	***	0000	024750	8-16-67 LUNAR ORB HI. 610MM B&W	- NONE	101K	165574	94	15.5 19	-.00
CAM. RAD. = 6.50N 19.20W SWING = 360. PHASE = 88. EMIS. ANG. = 16. CAM. RAD. = 1840.2 KM. SUN AZM = 90.6														
S. E. PART OF LAC 58 COPERNICUS, REINHOLD														
L 5	2	146	6.94N 18.28W	62	***	0000	024750	8-16-67 LUNAR ORB LO. F=80MM B&W	- NONE	101K	1262500	94	15.4 19	-.00
CAM. RAD. = 6.51N 19.20W SWING = 360. PHASE = 88. EMIS. ANG. = 16. CAM. RAD. = 1840.2 KM. SUN AZM = 90.6														
S. E. PART OF LAC 58 COPERNICUS, REINHOLD														
L 5	1	147	5.73N 18.25W	62	***	0000	024755	8-16-67 LUNAR ORB HI. 610MM B&W	- NONE	101K	165574	93	15.5 19	-.5
CAM. RAD. = 6.78N 19.18W SWING = 359. PHASE = 88. EMIS. ANG. = 16. CAM. RAD. = 1840.2 KM. SUN AZM = 90.7														
S. E. PART OF LAC 58 COPERNICUS, REINHOLD														
L 5	2	147	6.74N 18.25W	62	***	0000	024755	8-16-67 LUNAR ORB LO. F=80MM B&W	- NONE	101K	1262500	93	15.4 19	-.87
CAM. RAD. = 6.79N 19.17W SWING = 359. PHASE = 88. EMIS. ANG. = 16. CAM. RAD. = 1840.2 KM. SUN AZM = 90.7														
S. E. PART OF LAC 58 COPERNICUS, REINHOLD														
L 5	1	148	7.01N 18.22W	62	***	0000	024800	8-16-67 LUNAR ORB HI. 610MM B&W	- NONE	101K	165574	92	15.5 19	-.9
CAM. RAD. = 7.05N 19.15W SWING = 358. PHASE = 88. EMIS. ANG. = 16. CAM. RAD. = 1840.2 KM. SUN AZM = 90.8														
S. E. PART OF LAC 58 COPERNICUS, REINHOLD														
L 5	2	148	7.02N 18.23W	62	***	0000	024800	8-16-67 LUNAR ORB LO. F=80MM B&W	- NONE	101K	1262500	92	15.4 19	-.88
CAM. RAD. = 7.06N 19.15W SWING = 358. PHASE = 88. EMIS. ANG. = 16. CAM. RAD. = 1840.2 KM. SUN AZM = 90.8														
CENTRAL PART OF LAC 58 COPERNICUS, REINHOLD														
L 5	1	149	7.28N 18.20W	62	***	0000	024804	8-16-67 LUNAR ORB HI. 610MM B&W	- NONE	101K	165574	91	15.5 19	-.13
CAM. RAD. = 7.31N 19.13W SWING = 357. PHASE = 88. EMIS. ANG. = 16. CAM. RAD. = 1840.2 KM. SUN AZM = 90.9														
CENTRAL PART OF LAC 58 COPERNICUS, REINHOLD														
L 5	2	149	7.29N 18.20W	62	***	0000	024804	8-16-67 LUNAR ORB LO. F=80MM B&W	- NONE	101K	1262500	91	15.4 19	-.88
CAM. RAD. = 7.31N 19.13W SWING = 357. PHASE = 88. EMIS. ANG. = 16. CAM. RAD. = 1840.2 KM. SUN AZM = 90.9														
CENTRAL PART OF LAC 58 COPERNICUS, REINHOLD														
L 5	1	150	9.25N 20.41W	63	***	0000	055937	8-16-67 LUNAR ORB HI. 610MM B&W	- NONE	103K	168852	99	5.2 18	-.00
CAM. RAD. = 9.25N 20.72W SWING = 4. PHASE = 77. EMIS. ANG. = 5. CAM. RAD. = 1842.2 KM. SUN AZM = 91.5														
CENTRAL PART OF LAC 58 COPERNICUS, REINHOLD														

MIS SION	NAG ROLL	FR, PHOTO OR MAIN	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT; TIDE	SCALE PRIN.	AT PT.	T AZ	L ANG.	SUN FR.	SIDE, ANG. VERT	FWD, LAP S, R
L 5	2	150	9.21N	20.42W	63	055937	8-16-67	LUNAR ORB LO.F=80MM B&W	- NONE	103K	1287500	99	5.1	18	-	00	
CAM.NAD.= 9.26N 20.72W SWING= 4. PHASE= 77. EMIS.ANG.= 5. CENTRAL PART OF LAC 58 COPERNICUS,REINHOLD																	
L 5	1	151	9.49N	20.39W	63	055942	8-16-67	LUNAR ORB HI. 610MM B&W	- NONE	103K	168852	96	5.2	18	-	5	
CAM.NAD.= 9.52N 20.70W SWING= 1. PHASE= 77. EMIS.ANG.= 5. CENTRAL PART OF LAC 58 COPERNICUS,REINHOLD																	
L 5	2	151	9.50N	20.40W	63	055942	8-16-67	LUNAR ORB LO.F=80MM B&W	- NONE	103K	1287500	95	5.0	18	-	87	
CAM.NAD.= 9.53N 20.70W SWING= 1. PHASE= 77. EMIS.ANG.= 5. CENTRAL PART OF LAC 58 COPERNICUS,REINHOLD																	
L 5	1	152	9.78N	20.36W	63	055947	8-16-67	LUNAR ORB HI. 610MM B&W	- NONE	103K	168852	93	5.2	18	-	5	
CAM.NAD.= 9.80N 20.68W SWING= 350. PHASE= 77. EMIS.ANG.= 5. CENTRAL PART OF LAC 58 COPERNICUS,REINHOLD																	
L 5	2	152	9.79N	20.37W	63	055947	8-16-67	LUNAR ORB LO.F=80MM B&W	- NONE	103K	1287500	92	5.0	18	-	87	
CAM.NAD.= 9.81N 20.67W SWING= 350. PHASE= 77. EMIS.ANG.= 5. CENTRAL PART OF LAC 58 COPERNICUS,REINHOLD																	
L 5	1	153	10.07N	20.34W	63	055952	8-16-67	LUNAR ORB HI. 610MM B&W	- NONE	104K	170492	90	5.2	18	-	6	
CAM.NAD.= 10.07N 20.65W SWING= 355. PHASE= 77. EMIS.ANG.= 5. CENTRAL PART OF LAC 58 COPERNICUS,REINHOLD																	
L 5	2	153	10.08N	20.34W	63	055952	8-16-67	LUNAR ORB LO.F=80MM B&W	- NONE	104K	1300000	89	5.1	18	-	87	
CAM.NAD.= 10.08N 20.65W SWING= 355. PHASE= 77. EMIS.ANG.= 5. CENTRAL PART OF LAC 58 COPERNICUS,REINHOLD																	
L 5	1	154	10.36N	20.31W	63	055956	8-16-67	LUNAR ORB HI. 610MM B&W	- NONE	104K	170492	87	5.2	18	-	6	
CAM.NAD.= 10.35N 20.63W SWING= 352. PHASE= 77. EMIS.ANG.= 5. CENTRAL PART OF LAC 58 COPERNICUS,REINHOLD																	
L 5	2	154	10.37N	20.32W	63	055957	8-16-67	LUNAR ORB LO.F=80MM B&W	- NONE	104K	1300000	86	5.1	18	-	87	
CAM.NAD.= 10.35N 20.63W SWING= 352. PHASE= 77. EMIS.ANG.= 5. CENTRAL PART OF LAC 58 COPERNICUS,REINHOLD																	
L 5	1	155	10.65N	20.29W	63	060001	8-16-67	LUNAR ORB HI. 610MM B&W	- NONE	104K	170492	84	5.3	18	-	6	
CAM.NAD.= 10.62N 20.61W SWING= 349. PHASE= 77. EMIS.ANG.= 6. NORTHERN PART OF LAC 58 COPERNICUS,REINHOLD																	
L 5	2	155	10.66N	20.29W	63	060001	8-16-67	LUNAR ORB LO.F=80MM B&W	- NONE	104K	1300000	83	5.1	18	-	87	
CAM.NAD.= 10.62N 20.61W SWING= 349. PHASE= 77. EMIS.ANG.= 5. NORTHERN PART OF LAC 58 COPERNICUS,REINHOLD																	
L 5	1	156	10.94N	20.26W	63	060006	8-16-67	LUNAR ORB HI. 610MM B&W	- NONE	104K	170492	81	5.3	18	-	7	
CAM.NAD.= 10.89N 20.59W SWING= 346. PHASE= 77. EMIS.ANG.= 6. NORTHERN PART OF LAC 58 COPERNICUS,REINHOLD																	

MIS SION	MAG	FR. PHOTO OR	PRIN. PT. LAT.	ORB N	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=N.MI PT. K*KM.	T I L T AZ ANG. FR. SUN AZM=	SIDE. ANG. FWD. LAP B. R
L 5	2	156	10.95N	20.27W	63	***	060006	8-16-67 LUNAR ORB LO.F=80MM B6W	- NONE	104K 1300000	80 5.2 18	-.87
CAM.NAD.= 10.90N 20.58W SWING= 346. PHASE= 77. EMIS.ANG.= 5.												
NORTHERN PART OF LAC 58 COPERNICUS, REINHOLD												
L 5	1	157	11.23N	20.24W	63	***	060011	8-16-67 LUNAR ORB HI. 610MM B6W	- NONE	105K 172131	78 5.4 18	-.7
CAM.NAD.= 11.16N 20.56W SWING= 343. PHASE= 77. EMIS.ANG.= 6.												
NORTHERN PART OF LAC 58 COPERNICUS, REINHOLD												
L 5	2	157	11.24N	20.24W	63	***	060011	8-16-67 LUNAR ORB LO.F=80MM B6W	- NONE	105K 1312500	77 5.3 18	-.87
CAM.NAD.= 11.17N 20.56W SWING= 343. PHASE= 77. EMIS.ANG.= 6.												
NORTHERN PART OF LAC 58 COPERNICUS, REINHOLD												
L 5	2	164	12.57N	30.97W	69	***	010625	8-17-67 LUNAR ORB LO.F=80MM B6W	- NONE	109K 1362500	333 .7 17	-.87
CAM.NAD.= 12.53N 30.95W SWING= 238. PHASE= 73. EMIS.ANG.= 1.												
N. E. PART OF LAC 57 KEPLER, ENCKE												
6 N. W. PART OF LAC 58 COPERNICUS, REINHOLD												
L 5	2	165	12.87N	30.95W	69	***	010630	8-17-67 LUNAR ORB LO.F=80MM B6W	- NONE	110K 1375000	341 1.0 17	-.87
CAM.NAD.= 12.82N 30.93W SWING= 247. PHASE= 73. EMIS.ANG.= 1.												
N. E. PART OF LAC 57 KEPLER, ENCKE												
6 N. W. PART OF LAC 58 COPERNICUS, REINHOLD												
L 5	2	166	13.17N	30.92W	69	***	010635	8-17-67 LUNAR ORB LO.F=80MM B6W	- NONE	110K 1375000	347 1.2 17	-.87
CAM.NAD.= 13.10N 30.90W SWING= 252. PHASE= 73. EMIS.ANG.= 1.												
N. E. PART OF LAC 57 KEPLER, ENCKE												
6 N. W. PART OF LAC 58 COPERNICUS, REINHOLD												
L 5	2	167	13.47N	30.89W	69	***	010640	8-17-67 LUNAR ORB LO.F=80MM B6W	- NONE	110K 1375000	350 1.5 17	-.88
CAM.NAD.= 13.37N 30.88W SWING= 256. PHASE= 73. EMIS.ANG.= 2.												
N. E. PART OF LAC 57 KEPLER, ENCKE												
6 N. W. PART OF LAC 58 COPERNICUS, REINHOLD												

TOTAL PHOTOS IN THIS GROUP = 160



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-): (-), ( ), OR ( ) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G=CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EXTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREX; 2P,ZH,4S = ZEISS LENS(PLANAR,BIUGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SIGN	MAG ROLL	FR, OR	PHOTO LAT.	PRIN. LONG.	PT. M	ORB	GET TIMES-HR M SEC (1=ESTIMATED)	GHT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT; TIDE	SCALE AT PRIN. M=MM, MI PT.	T I L T AZ ANG. ANG. F#D. FR. LAP VERT S. 8	SUN SIDE		
L 1	2	103	2.07N	8.14E	62	***	223957	8-23-66	LUNAR ORB LO.F=80MM B6W	- NONE	67K	837500	222	12.5	11	-.00
		CAM.NAD.=	2.43N	8.47E	SWING= 41.		PHASE= 70.	EMIS.ANG.= 13.		CAM.RAD.=	1806.2 KM.	SUN AZM= 88.9				
S. E. PART OF LAC 59 M.VAPORUM, HYGINUS																
L 1	2	113	2.85N	5.28W	67	***	160403	8-24-66	LUNAR ORB LO.F=80MM B6W	- NONE	75K	937500	239	14.9	6	-.00
		CAM.NAD.=	3.18N	4.72W	SWING= 58.		PHASE= 70.	EMIS.ANG.= 15.		CAM.RAD.=	1814.2 KM.	SUN AZM= 88.8				
S. W. PART OF LAC 59 M.VAPORUM, HYGINUS																
L 1	2	114	2.77N	4.87W	67	***	160410	8-24-66	LUNAR ORB LO.F=80MM B6W	- NONE	74K	925000	238	14.6	7	-.77
		CAM.NAD.=	3.10N	4.33W	SWING= 57.		PHASE= 70.	EMIS.ANG.= 15.		CAM.RAD.=	1813.2 KM.	SUN AZM= 88.8				
S. W. PART OF LAC 59 M.VAPORUM, HYGINUS																
L 1	2	118	0.20N	2.55W	73	***	130205	8-25-66	LUNAR ORB LO.F=80MM B6W	- NONE	52K	650000	284	2.5	20	-.00
		CAM.NAD.=	.26N	2.47W	SWING= 93.		PHASE= 68.	EMIS.ANG.= 3.		CAM.RAD.=	1791.2 KM.	SUN AZM= 88.5				
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 1	2	119	0.25N	2.41W	73	***	130207	8-25-66	LUNAR ORB LO.F=80MM B6W	- NONE	52K	650000	285	2.4	20	-.87
		CAM.NAD.=	.23N	2.34W	SWING= 93.		PHASE= 68.	EMIS.ANG.= 3.		CAM.RAD.=	1791.2 KM.	SUN AZM= 88.5				
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 1	2	120	0.22N	2.27W	73	***	130210	8-25-66	LUNAR ORB LO.F=80MM B6W	- NONE	52K	650000	285	2.3	20	-.87
		CAM.NAD.=	.21N	2.20W	SWING= 93.		PHASE= 68.	EMIS.ANG.= 2.		CAM.RAD.=	1791.2 KM.	SUN AZM= 88.5				
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 1	2	121	0.19N	2.13W	73	***	130212	8-25-66	LUNAR ORB LO.F=80MM B6W	- NONE	52K	650000	285	2.1	20	-.87
		CAM.NAD.=	.18N	2.06W	SWING= 94.		PHASE= 68.	EMIS.ANG.= 2.		CAM.RAD.=	1791.2 KM.	SUN AZM= 88.5				
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 1	2	122	0.16N	1.98W	73	***	130214	8-25-66	LUNAR ORB LO.F=80MM B6W	- NONE	51K	637500	285	2.0	20	-.87
		CAM.NAD.=	.15N	1.93W	SWING= 94.		PHASE= 68.	EMIS.ANG.= 2.		CAM.RAD.=	1790.2 KM.	SUN AZM= 88.4				
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 1	2	123	0.13N	1.84W	73	***	130216	8-25-66	LUNAR ORB LO.F=80MM B6W	- NONE	51K	637500	286	1.8	20	-.87
		CAM.NAD.=	.12N	1.79W	SWING= 94.		PHASE= 68.	EMIS.ANG.= 2.		CAM.RAD.=	1790.2 KM.	SUN AZM= 88.4				
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																

MISSION #	MAG #	FR. PHOTO OR MAIN #	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES	GHT HR	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.MI K=KM.	SCALE PRIN. PT.	T I L T AZ	L T ANG. FR. VERT	SUN ANG.	SIDE. FWD. LAP #. W
L 1	2	124	0.10N	1.71W	73	***	***	130219	8-25-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	286	1.7 21	-.87	
CAM. RAD. = 1790.2 KM. SUN AZM = 88.4																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 1	2	125	0.07N	1.57W	73	***	***	130221	8-25-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	286	1.6 21	-.87	
CAM. RAD. = 1790.2 KM. SUN AZM = 88.4																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 1	2	126	0.04N	1.43W	73	***	***	130223	8-25-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	287	1.4 21	-.87	
CAM. RAD. = 1790.2 KM. SUN AZM = 88.4																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 1	2	127	0.01N	1.29W	73	***	***	130225	8-25-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	287	1.3 21	-.87	
CAM. RAD. = 1790.2 KM. SUN AZM = 88.4																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 1	2	128	0.02S	1.15W	73	***	***	130228	8-25-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	288	1.1 21	-.87	
CAM. RAD. = 1790.2 KM. SUN AZM = 88.4																
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 1	2	129	0.05S	1.01W	73	***	***	130230	8-25-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	289	1.0 21	-.87	
CAM. RAD. = 1790.2 KM. SUN AZM = 88.4																
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 1	2	130	0.08S	0.87W	73	***	***	130232	8-25-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	290	.9 21	-.87	
CAM. RAD. = 1790.2 KM. SUN AZM = 88.3																
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 1	2	131	0.11S	0.74W	73	***	***	130234	8-25-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	292	.7 22	-.87	
CAM. RAD. = 1790.2 KM. SUN AZM = 88.3																
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 1	2	132	0.14S	0.60W	73	***	***	130237	8-25-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	294	.6 22	-.87	
CAM. RAD. = 1790.2 KM. SUN AZM = 88.3																
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 1	2	133	0.17S	0.46W	73	***	***	130239	8-25-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	297	.5 22	-.87	
CAM. RAD. = 1790.2 KM. SUN AZM = 88.3																
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	1	92	4.26N	4.58E	69	***	***	023046	11-21-66 LUNAR ORB HI. 610MM B&W	- NONE	44K	72131	12	13.5 14	-.00	
CAM. RAD. = 1783.2 KM. SUN AZM = 91.4																
S. E. PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	2	92	4.26N	4.59E	69	***	***	023046	11-21-66 LUNAR ORB LO.F=80MM B&W	- NONE	44K	550000	12	13.6 14	-.00	
CAM. RAD. = 1783.2 KM. SUN AZM = 91.4																
S. E. PART OF LAC 59 M.VAPORUM, HYGINUS																

HIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR M SEC (I=ESTIMATED)	GHT M SEC	H-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE	SCALE PRIN.	AT PT.	T I L 1 AZ	SUN ANG.	SIDE ANG.	FWD. LAP R. R
L 2	1	93	0.21N	1.10W	71 ***	092737	11-21-66	LUNAR ORB HI, 610MM B&W	- NONE	44K	72131	191	68.3	12	-..	
CAM.NAD.= 4.15N 0.31W SWING= 1. PHASE= 76. EMIS.ANG.= 72. CAM.RAD.= 1783.2 KM. SUN AZM= 90.4																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 2	2	93	0.23N	1.08W	71 ***	092737	11-21-66	LUNAR ORB LO, F=80MM B&W	- NONE	44K	550000	191	68.2	12	-..	
CAM.NAD.= 4.15N 0.31W SWING= 1. PHASE= 76. EMIS.ANG.= 72. CAM.RAD.= 1783.2 KM. SUN AZM= 90.4																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 2	1	95	2.42N	0.44E	75 ***	232411	11-21-66	LUNAR ORB HI, 610MM B&W	- NONE	41K	67213	79	.7	21	-..	
CAM.NAD.= 2.42N 0.42E SWING= 247. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 1780.2 KM. SUN AZM= 91.3																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	2	95	2.43N	0.44E	75 ***	232411	11-21-66	LUNAR ORB LO, F=80MM B&W	- NONE	41K	512500	72	.8	21	-..	
CAM.NAD.= 2.42N 0.43E SWING= 241. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 1780.2 KM. SUN AZM= 91.3																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	1	96	2.51N	2.08W	76 ***	025235	11-22-66	LUNAR ORB HI, 610MM B&W	- NONE	41K	67213	120	.3	20	-..	
CAM.NAD.= 2.51N 2.08W SWING= 289. PHASE= 70. EMIS.ANG.= 0. CAM.RAD.= 1780.2 KM. SUN AZM= 91.3																
S. n. PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	2	96	2.51N	2.07W	76 ***	025235	11-22-66	LUNAR ORB LO, F=80MM B&W	- NONE	41K	5.2500	97	.3	20	-..	
CAM.NAD.= 2.51N 2.08W SWING= 266. PHASE= 70. EMIS.ANG.= 0. CAM.RAD.= 1780.2 KM. SUN AZM= 91.3																
S. n. PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	1	97	2.49N	1.97W	76 ***	025236	11-22-66	LUNAR ORB HI, 610MM B&W	- NONE	41K	67213	115	.4	20	-..	6
CAM.NAD.= 2.49N 1.98W SWING= 284. PHASE= 70. EMIS.ANG.= 0. CAM.RAD.= 1780.2 KM. SUN AZM= 91.3																
S. n. PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	2	97	2.49N	1.96W	76 ***	025237	11-22-66	LUNAR ORB LO, F=80MM B&W	- NONE	41K	512500	98	.4	20	-..	87
CAM.NAD.= 2.49N 1.97W SWING= 267. PHASE= 70. EMIS.ANG.= 0. CAM.RAD.= 1780.2 KM. SUN AZM= 91.3																
S. W. PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	1	98	2.46N	1.86W	76 ***	025238	11-22-66	LUNAR ORB HI, 610MM B&W	- NONE	41K	67213	112	.5	20	-..	6
CAM.NAD.= 2.47N 1.87W SWING= 281. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 1780.2 KM. SUN AZM= 91.3																
S. W. PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	2	98	2.46N	1.85W	76 ***	025238	11-22-66	LUNAR ORB LO, F=80MM B&W	- NONE	41K	512500	99	.5	20	-..	87
CAM.NAD.= 2.47N 1.86W SWING= 267. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 1780.2 KM. SUN AZM= 91.3																
S. W. PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	1	99	2.44N	1.75W	76 ***	025240	11-22-66	LUNAR ORB HI, 610MM B&W	- NONE	41K	67213	110	.6	20	-..	6
CAM.NAD.= 2.45N 1.76W SWING= 279. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 1780.2 KM. SUN AZM= 91.3																
S. n. PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	2	99	2.44N	1.74W	76 ***	025240	11-22-66	LUNAR ORB LO, F=80MM B&W	- NONE	41K	512500	99	.6	20	-..	87
CAM.NAD.= 2.44N 1.75W SWING= 268. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 1780.2 KM. SUN AZM= 91.3																
S. W. PART OF LAC 59 M.VAPORUM, HYGINUS																

MIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HH M SEC (I=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE, ANG. ANG. FWD. FR. LAP VERT R. S
L 2	1	100°	2.42N	1.63W	76 ***	025242	11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	41K	67213	109	.7 20
		CAM.NAD.=	2.42N	1.65W	SWING= 277.	PHASE= 70.		EMIS.ANG.= 1.	CAM.RAD.=	1780.2 KM.		SUN AZH= 91.3	- .6
				S. N. PART OF	LAC 59 M.VAPORUM, HYGINUS								
L 2	2	100	2.42N	1.62W	76 ***	025242	11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	41K	512500	100	.7 20
		CAM.NAD.=	2.42N	1.64W	SWING= 268.	PHASE= 70.		EMIS.ANG.= 1.	CAM.RAD.=	1780.2 KM.		SUN AZH= 91.3	- .87
				S. N. PART OF	LAC 59 M.VAPORUM, HYGINUS								
L 2	1	101°	2.39N	1.52W	76 ***	025244	11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	41K	67213	108	.8 20
		CAM.NAD.=	2.40N	1.54W	SWING= 276.	PHASE= 70.		EMIS.ANG.= 1.	CAM.RAD.=	1780.2 KM.		SUN AZH= 91.3	- .6
				S. N. PART OF	LAC 59 M.VAPORUM, HYGINUS								
L 2	2	101	2.39N	1.51W	76 ***	025244	11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	41K	512500	100	.9 20
		CAM.NAD.=	2.40N	1.53W	SWING= 268.	PHASE= 70.		EMIS.ANG.= 1.	CAM.RAD.=	1780.2 KM.		SUN AZH= 91.3	- .87
				S. N. PART OF	LAC 59 M.VAPORUM, HYGINUS								
L 2	1	102°	2.37N	1.41W	76 ***	025245	11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	41K	67213	107	.9 21
		CAM.NAD.=	2.38N	1.43W	SWING= 275.	PHASE= 70.		EMIS.ANG.= 1.	CAM.RAD.=	1780.2 KM.		SUN AZH= 91.3	- .5
				S. N. PART OF	LAC 59 M.VAPORUM, HYGINUS								
L 2	2	102	2.37N	1.40W	76 ***	025246	11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	41K	512500	100	1.0 21
		CAM.NAD.=	2.38N	1.42W	SWING= 268.	PHASE= 70.		EMIS.ANG.= 1.	CAM.RAD.=	1780.2 KM.		SUN AZH= 91.3	- .87
				S. N. PART OF	LAC 59 M.VAPORUM, HYGINUS								
L 2	1	103	2.35N	1.29W	76 ***	025247	11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	41K	67213	106	1.1 21
		CAM.NAD.=	2.35N	1.32W	SWING= 275.	PHASE= 70.		EMIS.ANG.= 1.	CAM.RAD.=	1780.2 KM.		SUN AZH= 91.3	- .5
				S. N. PART OF	LAC 59 M.VAPORUM, HYGINUS								
L 2	2	103	2.35N	1.29W	76 ***	025247	11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	41K	512500	100	1.1 21
		CAM.NAD.=	2.35N	1.31W	SWING= 269.	PHASE= 70.		EMIS.ANG.= 1.	CAM.RAD.=	1780.2 KM.		SUN AZH= 91.3	- .87
				S. N. PART OF	LAC 59 M.VAPORUM, HYGINUS								
L 2	1	104	2.16N	2.27W	77 ***	062137	11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	41K	67213	94	.6 21
		CAM.NAD.=	2.16N	2.28W	SWING= 263.	PHASE= 69.		EMIS.ANG.= 1.	CAM.RAD.=	1780.2 KM.		SUN AZH= 91.2	- .00
				SOUTHERN PART OF	LAC 59 M.VAPORUM, HYGINUS								
L 2	2	104	2.16N	2.26W	77 ***	062137	11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	41K	512500	85	.7 21
		CAM.NAD.=	2.15N	2.27W	SWING= 254.	PHASE= 69.		EMIS.ANG.= 1.	CAM.RAD.=	1780.2 KM.		SUN AZH= 91.2	- .00
				SOUTHERN PART OF	LAC 59 M.VAPORUM, HYGINUS								
L 2	1	105	2.13N	2.15W	77 ***	062138	11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	41K	67213	95	.8 22
		CAM.NAD.=	2.13N	2.17W	SWING= 264.	PHASE= 69.		EMIS.ANG.= 1.	CAM.RAD.=	1780.2 KM.		SUN AZH= 91.2	- .5
				SOUTHERN PART OF	LAC 59 M.VAPORUM, HYGINUS								
L 2	2	105	2.13N	2.14W	77 ***	062139	11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	41K	512500	87	.8 22
		CAM.NAD.=	2.13N	2.16W	SWING= 256.	PHASE= 69.		EMIS.ANG.= 1.	CAM.RAD.=	1780.2 KM.		SUN AZH= 91.2	- .87
				SOUTHERN PART OF	LAC 59 M.VAPORUM, HYGINUS								

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T I L T	SUN SIDE.			
SUN ROLL	OR	LAT.			TIMES-HR M SEC			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.			
N	N	MAIN	LONG.		(I=ESTIMATED)			TYPE		M=N,M1	PT.	FR.	ANG.			
										K=KM.		VERT	LAP			
L 2	1	106	2.11N	2.04W	77 ***	062140	11-22-66	LUNAR	ORB HI. 610MM B&W	-	NONE	41K	67213	96	.9 22	-.5
		CAM.NAD.=	2.11N	2.06W	SWING=	265.	PHASE=	69.	EMIS.ANG.=	1.	CAM.RAD.=	1780.2 KM.	SUN	AZM=	91.2	
			SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 2	2	106	2.11N	2.03W	77 ***	062140	11-22-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	41K	512500	89	.9 22	-.87
		CAM.NAD.=	2.11N	2.05W	SWING=	258.	PHASE=	69.	EMIS.ANG.=	1.	CAM.RAD.=	1780.2 KM.	SUN	AZM=	91.2	
			SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 2	1	107	2.08N	1.92W	77 ***	062142	11-22-66	LUNAR	ORB HI. 610MM B&W	-	NONE	41K	67213	97	1.0 22	-.5
		CAM.NAD.=	2.08N	1.95W	SWING=	265.	PHASE=	69.	EMIS.ANG.=	1.	CAM.RAD.=	1780.2 KM.	SUN	AZM=	91.2	
			SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 2	2	107	2.08N	1.92W	77 ***	062142	11-22-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	41K	512500	90	1.0 22	-.87
		CAM.NAD.=	2.08N	1.94W	SWING=	259.	PHASE=	69.	EMIS.ANG.=	1.	CAM.RAD.=	1780.2 KM.	SUN	AZM=	91.2	
			SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 2	1	108	2.06N	1.81W	77 ***	062144	11-22-66	LUNAR	ORB HI. 610MM B&W	-	NONE	41K	67213	97	1.1 22	-.5
		CAM.NAD.=	2.06N	1.84W	SWING=	266.	PHASE=	69.	EMIS.ANG.=	1.	CAM.RAD.=	1780.2 KM.	SUN	AZM=	91.2	
			SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 2	2	108	2.06N	1.80W	77 ***	062144	11-22-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	41K	512500	92	1.1 22	-.87
		CAM.NAD.=	2.06N	1.83W	SWING=	260.	PHASE=	69.	EMIS.ANG.=	1.	CAM.RAD.=	1780.2 KM.	SUN	AZM=	91.2	
			SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 2	1	109	2.04N	1.70W	77 ***	062146	11-22-66	LUNAR	ORB HI. 610MM B&W	-	NONE	41K	67213	98	1.2 22	-.6
		CAM.NAD.=	2.04N	1.73W	SWING=	266.	PHASE=	69.	EMIS.ANG.=	1.	CAM.RAD.=	1780.2 KM.	SUN	AZM=	91.2	
			SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 2	2	109	2.04N	1.69W	77 ***	062146	11-22-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	41K	512500	92	1.3 22	-.87
		CAM.NAD.=	2.04N	1.72W	SWING=	261.	PHASE=	69.	EMIS.ANG.=	1.	CAM.RAD.=	1780.2 KM.	SUN	AZM=	91.2	
			SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 2	1	110	2.01N	1.58W	77 ***	062148	11-22-66	LUNAR	ORB HI. 610MM B&W	-	NONE	41K	67213	98	1.3 22	-.5
		CAM.NAD.=	2.02N	1.62W	SWING=	267.	PHASE=	69.	EMIS.ANG.=	1.	CAM.RAD.=	1780.2 KM.	SUN	AZM=	91.2	
			SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 2	2	110	2.01N	1.57W	77 ***	062148	11-22-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	41K	512500	93	1.4 22	-.87
		CAM.NAD.=	2.01N	1.61W	SWING=	262.	PHASE=	69.	EMIS.ANG.=	1.	CAM.RAD.=	1780.2 KM.	SUN	AZM=	91.2	
			SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 2	1	111	1.99N	1.47W	77 ***	062149	11-22-66	LUNAR	ORB HI. 610MM B&W	-	NONE	41K	67213	98	1.4 22	-.6
		CAM.NAD.=	1.99N	1.50W	SWING=	267.	PHASE=	69.	EMIS.ANG.=	1.	CAM.RAD.=	1780.2 KM.	SUN	AZM=	91.2	
			SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 2	2	111	1.99N	1.46W	77 ***	062150	11-22-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	41K	512500	94	1.5 22	-.87
		CAM.NAD.=	1.99N	1.50W	SWING=	262.	PHASE=	69.	EMIS.ANG.=	1.	CAM.RAD.=	1780.2 KM.	SUN	AZM=	91.2	
			SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR (ESTIMATED)	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=N.M1 K=KM.	T I L T A7 ANG. ANG. FR. VERT	SUN SIDE. FWD. LAP S. B
L 2	1	113	0.69N 1.25W	80	000	0000	164909 11-22-66	LUNAR ORB HI. 610MM R6W	- NONE	47K 77049	108 1.2 28	- .00
		CAM. RAD. =	.70N 1.28W		SWING = 276.		PHASE = 63.	EMIS. ANG. = 1.	CAM. RAD. =	1786.2 KM.	SUN AZH = 90.8	
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	2	113	0.69N 1.25W	80	000	0000	164909 11-22-66	LUNAR ORB LO.F=80MM R6W	- NONE	47K 587500	103 1.2 28	- .00
		CAM. RAD. =	.70N 1.28W		SWING = 271.		PHASE = 63.	EMIS. ANG. = 1.	CAM. RAD. =	1786.2 KM.	SUN AZH = 90.8	
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	1	114	0.66N 1.13W	80	000	0000	164911 11-22-66	LUNAR ORB HI. 610MM R6W	- NONE	47K 77049	108 1.3 28	- .6
		CAM. RAD. =	.68N 1.16W		SWING = 276.		PHASE = 63.	EMIS. ANG. = 1.	CAM. RAD. =	1786.2 KM.	SUN AZH = 90.8	
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	2	114	0.67N 1.12W	80	000	0000	164911 11-22-66	LUNAR ORB LO.F=80MM R6W	- NONE	47K 587500	103 1.3 28	- .87
		CAM. RAD. =	.67N 1.15W		SWING = 271.		PHASE = 63.	EMIS. ANG. = 1.	CAM. RAD. =	1786.2 KM.	SUN AZH = 90.8	
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	1	115	0.64N 1.00W	80	000	0000	164913 11-22-66	LUNAR ORB HI. 610MM R6W	- NONE	47K 77049	107 1.4 28	- .7
		CAM. RAD. =	.65N 1.04W		SWING = 275.		PHASE = 63.	EMIS. ANG. = 1.	CAM. RAD. =	1786.2 KM.	SUN AZH = 90.8	
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	2	115	0.64N 0.99W	80	000	0000	164913 11-22-66	LUNAR ORB LO.F=80MM R6W	- NONE	47K 587500	103 1.5 28	- .87
		CAM. RAD. =	.65N 1.03W		SWING = 271.		PHASE = 63.	EMIS. ANG. = 1.	CAM. RAD. =	1786.2 KM.	SUN AZH = 90.8	
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN												
L 2	1	116	0.61N 0.87W	80	000	0000	164915 11-22-66	LUNAR ORB HI. 610MM R6W	- NONE	47K 77049	107 1.6 28	- .6
		CAM. RAD. =	.62N 0.91W		SWING = 275.		PHASE = 63.	EMIS. ANG. = 2.	CAM. RAD. =	1786.2 KM.	SUN AZH = 90.7	
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	2	116	0.61N 0.86W	80	000	0000	164915 11-22-66	LUNAR ORB LO.F=80MM R6W	- NONE	47K 587500	103 1.6 28	- .87
		CAM. RAD. =	.62N 0.90W		SWING = 271.		PHASE = 63.	EMIS. ANG. = 2.	CAM. RAD. =	1786.2 KM.	SUN AZH = 90.7	
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN												
L 2	1	117	0.58N 0.74W	80	000	0000	164917 11-22-66	LUNAR ORB HI. 610MM R6W	- NONE	47K 77049	106 1.7 28	- .6
		CAM. RAD. =	.60N 0.79W		SWING = 274.		PHASE = 63.	EMIS. ANG. = 2.	CAM. RAD. =	1786.2 KM.	SUN AZH = 90.7	
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	2	117	0.58N 0.73W	80	000	0000	164918 11-22-66	LUNAR ORB LO.F=80MM R6W	- NONE	47K 587500	103 1.7 28	- .87
		CAM. RAD. =	.59N 0.78W		SWING = 270.		PHASE = 63.	EMIS. ANG. = 2.	CAM. RAD. =	1786.2 KM.	SUN AZH = 90.7	
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN												
L 2	1	118	0.56N 0.61W	80	000	0000	164919 11-22-66	LUNAR ORB HI. 610MM R6W	- NONE	48K 78689	106 1.8 28	- .6
		CAM. RAD. =	.57N 0.66W		SWING = 274.		PHASE = 63.	EMIS. ANG. = 2.	CAM. RAD. =	1787.2 KM.	SUN AZH = 90.7	
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	2	118	0.56N 0.60W	80	000	0000	164920 11-22-66	LUNAR ORB LO.F=80MM R6W	- NONE	48K 600000	102 1.9 28	- .87
		CAM. RAD. =	.57N 0.65W		SWING = 270.		PHASE = 63.	EMIS. ANG. = 2.	CAM. RAD. =	1787.2 KM.	SUN AZH = 90.7	
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN												

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIME (1-2-3-4-5-6-7-8-9-0)	SHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=N-MI PT.	TILT AZ ANG. ANG. FWD. FR. LAP	SUN SIDE, SUN AZH=
L 2	1	119	0.53N 0.48W	80	000	0000	164922 11-22-66	LUNAR ORB HI, 610MM B6W	- NONE	48K 786R9	106 2.0 29	- .6
CAM-RAD.= .54N 0.54W SWING= 274. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1787.2 KM. SUN AZH= 90.7												
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	2	119	0.53N 0.47W	80	000	0000	164922 11-22-66	LUNAR ORB LO, F=80MM B6W	- NONE	48K 600000	102 2.0 29	- .87
CAM-RAD.= .54N 0.53W SWING= 270. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1787.2 KM. SUN AZH= 90.7												
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN												
L 2	1	120	0.50N 0.35W	80	000	0000	164924 11-22-66	LUNAR ORB HI, 610MM B6W	- NONE	48K 786R9	105 2.1 29	- .6
CAM-RAD.= .52N 0.41W SWING= 273. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1787.2 KM. SUN AZH= 90.7												
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	2	120	0.50N 0.34W	80	000	0000	164924 11-22-66	LUNAR ORB LO, F=80MM B6W	- NONE	48K 600000	102 2.1 29	- .87
CAM-RAD.= .51N 0.40W SWING= 270. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1787.2 KM. SUN AZH= 90.7												
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN												
L 2	1	121	0.32N 1.41W	81	000	0000	201812 11-22-66	LUNAR ORB HI, 610MM B6W	- NONE	49K 80328	107 1.2 29	- .00
CAM-RAD.= .33N 1.44W SWING= 275. PHASE= 62. EMIS-ANG.= 1. CAM-RAD.= 1788.2 KM. SUN AZH= 90.6												
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	2	121	0.32N 1.40W	81	000	0000	201812 11-22-66	LUNAR ORB LO, F=80MM B6W	- NONE	49K 612500	102 1.3 29	- .00
CAM-RAD.= .33N 1.43W SWING= 270. PHASE= 62. EMIS-ANG.= 1. CAM-RAD.= 1788.2 KM. SUN AZH= 90.6												
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN												
L 2	1	122	0.29N 1.27W	81	000	0000	201814 11-22-66	LUNAR ORB HI, 610MM B6W	- NONE	49K 80328	106 1.4 30	- .6
CAM-RAD.= .30N 1.31W SWING= 274. PHASE= 62. EMIS-ANG.= 1. CAM-RAD.= 1788.2 KM. SUN AZH= 90.6												
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	2	122	0.29N 1.26W	81	000	0000	201814 11-22-66	LUNAR ORB LO, F=80MM B6W	- NONE	49K 612500	102 1.4 30	- .87
CAM-RAD.= .30N 1.30W SWING= 270. PHASE= 62. EMIS-ANG.= 1. CAM-RAD.= 1789.2 KM. SUN AZH= 90.6												
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN												
L 2	1	123	0.26N 1.14W	81	000	0000	201816 11-22-66	LUNAR ORB HI, 610MM B6W	- NONE	50K 81967	106 1.5 30	- .6
CAM-RAD.= .27N 1.18W SWING= 274. PHASE= 62. EMIS-ANG.= 2. CAM-RAD.= 1789.2 KM. SUN AZH= 90.6												
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	2	123	0.26N 1.13W	81	000	0000	201816 11-22-66	LUNAR ORB LO, F=80MM B6W	- NONE	50K 625000	102 1.5 30	- .87
CAM-RAD.= .27N 1.17W SWING= 270. PHASE= 62. EMIS-ANG.= 2. CAM-RAD.= 1789.2 KM. SUN AZH= 90.6												
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN												
L 2	1	124	0.23N 1.00W	81	000	0000	201818 11-22-66	LUNAR ORB HI, 610MM B6W	- NONE	50K 81967	106 1.6 30	- .6
CAM-RAD.= .24N 1.05W SWING= 274. PHASE= 62. EMIS-ANG.= 2. CAM-RAD.= 1789.2 KM. SUN AZH= 90.6												
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 2	2	124	0.23N 0.99W	81	000	0000	201819 11-22-66	LUNAR ORB LO, F=80MM B6W	- NONE	50K 625000	102 1.7 30	- .87
CAM-RAD.= .24N 1.04W SWING= 270. PHASE= 62. EMIS-ANG.= 2. CAM-RAD.= 1789.2 KM. SUN AZH= 90.6												
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN												

HIS SION	MAG KULL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. N	ORB M	GET TIMES-HR	GHT M SEC	M-DA-YR (ESTIMATED)	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT		T I L T AZ	SUN SIDE, ANG. ANG. FWD. FR. LAP VERT 8. 8	
												TUDE M=N.MI K=KM.	PRIN. PT.			
L 2	1	125°	0.20N	0.87W	81	***	201821	11-22-66	LUNAR	ORB HI. 610MM B&W	- NONE	50K	81967	105	1.8 30	-. 6
CAM.NAD.= .22N 0.92W SWING= 273. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZH= 90.5																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 2	2	125	0.20N	0.86W	81	***	201821	11-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	50K	625000	102	1.8 30	-.87
CAM.NAD.= .21N 0.91W SWING= 270. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZH= 90.5																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 2	1	126	0.17N	0.73W	81	***	201823	11-22-66	LUNAR	ORB HI. 610MM B&W	- NONE	50K	81967	105	1.9 30	-. 6
CAM.NAD.= .19N 0.78W SWING= 273. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZH= 90.5																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 2	2	126	0.18N	0.72W	81	***	201823	11-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	50K	625000	102	1.9 30	-.87
CAM.NAD.= .19N 0.78W SWING= 270. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZH= 90.5																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 2	1	127	0.14N	0.59W	81	***	201825	11-22-66	LUNAR	ORB HI. 610MM B&W	- NONE	50K	81967	105	2.0 30	-. 6
CAM.NAD.= .16N 0.65W SWING= 273. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZH= 90.5																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 2	2	127	0.15N	0.58W	81	***	201825	11-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	50K	625000	102	2.1 30	-.87
CAM.NAD.= .16N 0.64W SWING= 270. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZH= 90.5																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 2	1	128	0.12N	0.46W	81	***	201827	11-22-66	LUNAR	ORB HI. 610MM B&W	- NONE	51K	83607	105	2.2 30	-. 6
CAM.NAD.= .13N 0.52W SWING= 273. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1790.2 KM. SUN AZH= 90.5																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 2	2	128	0.12N	0.44W	81	***	201827	11-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	51K	637500	102	2.2 30	-.87
CAM.NAD.= .13N 0.51W SWING= 270. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1790.2 KM. SUN AZH= 90.5																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 2	1	129	0.04S	1.63W	82	***	234714	11-22-66	LUNAR	ORB HI. 610MM B&W	- NONE	52K	85246	104	1.4 31	-.00
CAM.NAD.= .03S 1.67W SWING= 272. PHASE= 60. EMIS.ANG.= 1. CAM.RAD.= 1791.2 KM. SUN AZH= 90.4																
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	2	129	0.04S	1.62W	82	***	234714	11-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	52K	650000	99	1.4 31	-.00
CAM.NAD.= .03S 1.66W SWING= 267. PHASE= 60. EMIS.ANG.= 1. CAM.RAD.= 1791.2 KM. SUN AZH= 90.4																
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	1	130	0.07S	1.49W	82	***	234716	11-22-66	LUNAR	ORB HI. 610MM B&W	- NONE	52K	85246	104	1.5 31	-. 6
CAM.NAD.= .06S 1.53W SWING= 272. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZH= 90.4																
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 2	2	130	0.07S	1.48W	82	***	234716	11-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	52K	650000	100	1.6 31	-.87
CAM.NAD.= .06S 1.53W SWING= 268. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZH= 90.4																
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																

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MIS SION	HAG ROLL	FR. OR MAIN	PHOTO LAT.	PRIN. LONG.	PT. "	ORB "	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE SCALE AT		TILT		SUN SIDE	
												TUDE M-N-MI K=KM.	PRIN. PT.	AZ ANG. FR. VERT	ANG. ANG. FR.	FWD. LAP W. W	
L 2	1	131	U-105	1.35W	82	...	234718	11-22-66	LUNAR	ORB HI. 610MM B&W	- NONE	52K	85246	104	1.7	31	- . A
CAM.NAD.= .095 1.39W SWING= 272. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.4 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN 6 SOUTHERN PART OF LAC 59 H.VAPORUM, HYGINUS																	
L 2	2	131	U-105	1.34W	82	...	234718	11-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	52K	650000	100	1.7	31	- .87
CAM.NAD.= .095 1.39W SWING= 268. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.4 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN 6 SOUTHERN PART OF LAC 59 H.VAPORUM, HYGINUS																	
L 2	1	132	U-135	1.20W	82	...	234721	11-22-66	LUNAR	ORB HI. 610MM B&W	- NONE	53K	86895	103	1.8	31	- . A
CAM.NAD.= .125 1.25W SWING= 272. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZM= 90.4 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN 6 SOUTHERN PART OF LAC 59 H.VAPORUM, HYGINUS																	
L 2	2	132	U-135	1.19W	82	...	234721	11-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	53K	662500	100	1.8	31	- .87
CAM.NAD.= .125 1.25W SWING= 268. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZM= 90.4 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN 6 SOUTHERN PART OF LAC 59 H.VAPORUM, HYGINUS																	
L 2	1	133	U-165	1.06W	82	...	234723	11-22-66	LUNAR	ORB HI. 610MM B&W	- NONE	53K	86895	103	1.9	32	- . 5
CAM.NAD.= .155 1.11W SWING= 271. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZM= 90.3 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN 6 SOUTHERN PART OF LAC 59 H.VAPORUM, HYGINUS																	
L 2	2	133	U-165	1.05W	82	...	234723	11-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	53K	662500	100	2.0	32	- .87
CAM.NAD.= .155 1.11W SWING= 268. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZM= 90.3 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN 6 SOUTHERN PART OF LAC 59 H.VAPORUM, HYGINUS																	
L 2	1	134	U-235	0.91W	82	...	234725	11-22-66	LUNAR	ORB HI. 610MM B&W	- NONE	53K	86895	103	2.1	32	- . 5
CAM.NAD.= .185 0.97W SWING= 271. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZM= 90.3 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN 6 SOUTHERN PART OF LAC 59 H.VAPORUM, HYGINUS																	
L 2	2	134	U-195	0.90W	82	...	234725	11-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	53K	662500	100	2.1	32	- .87
CAM.NAD.= .185 0.96W SWING= 268. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZM= 90.3 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN 6 SOUTHERN PART OF LAC 59 H.VAPORUM, HYGINUS																	
L 2	1	135	U-235	0.76W	82	...	234728	11-22-66	LUNAR	ORB HI. 610MM B&W	- NONE	53K	86895	103	2.2	32	- . 4
CAM.NAD.= .215 0.83W SWING= 271. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZM= 90.3 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN 6 SOUTHERN PART OF LAC 59 H.VAPORUM, HYGINUS																	
L 2	2	135	U-235	0.75W	82	...	234728	11-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	53K	662500	100	2.3	32	- .87
CAM.NAD.= .215 0.82W SWING= 268. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZM= 90.3 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN 6 SOUTHERN PART OF LAC 59 H.VAPORUM, HYGINUS																	
L 2	1	136	U-265	0.61W	82	...	234730	11-22-66	LUNAR	ORB HI. 610MM B&W	- NONE	54K	88525	103	2.4	32	- . 4
CAM.NAD.= .245 0.68W SWING= 271. PHASE= 60. EMIS.ANG.= 3. CAM.RAD.= 1793.2 KM. SUN AZM= 90.3 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN 6 SOUTHERN PART OF LAC 59 H.VAPORUM, HYGINUS																	
L 2	2	136	U-265	0.60W	82	...	234730	11-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	54K	675000	100	2.4	32	- .87
CAM.NAD.= .245 0.67W SWING= 268. PHASE= 60. EMIS.ANG.= 3. CAM.RAD.= 1793.2 KM. SUN AZM= 90.3 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN 6 SOUTHERN PART OF LAC 59 H.VAPORUM, HYGINUS																	

MIS SION	MAG #	FR, OR	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET T	GMT MES-HR	M-DA-YR M SEC	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN. M=N.MI PT. K=KM.	T I L I AZ ANG.	SUN SIDE, ANG. FWD. LAP S. S	
L 3	2	73	7.59N	6.61E	56	000	0000	034130	2-17-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	63K	787500	20 52.5 7 - .00
CAM.NAD.= 4.99N 5.60E SWING= 177. PHASE= 101. EMIS.ANG.= 55. CAM.RAD.= 1802.2 KM. SUN AZM= 92.4																
EASTERN PART OF LAC 59 M.VAPORUM, HYGINUS & WESTERN PART OF LAC AD J. CAESAR, SAHINE, JANSEN																
L 3	1	84	0.80N	1.04W	62	000	0000	003514	2-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	47K	77049	258 67.4 10 - .00
CAM.NAD.= 1.61N 2.92E SWING= 32. PHASE= 16. EMIS.ANG.= 71. CAM.RAD.= 1786.2 KM. SUN AZM= 91.4																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																
L 3	2	84	0.80N	1.03W	62	000	0000	003514	2-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	47K	587500	258 67.4 10 - .00
CAM.NAD.= 1.61N 2.93E SWING= 32. PHASE= 15. EMIS.ANG.= 71. CAM.RAD.= 1786.2 KM. SUN AZM= 91.6																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & N. W. PART OF LAC 77 PTOLMAEUS, KLEIN																
L 3	1	85	4.94N	0.34W	63	000	0000	040305	2-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	49K	80328	21 57.1 12 - .00
CAM.NAD.= 2.52N 1.30W SWING= 178. PHASE= 100. EMIS.ANG.= 60. CAM.RAD.= 1788.2 KM. SUN AZM= 92.6																
CENTRAL PART OF LAC 59 M.VAPORUM, HYGINUS																
L 3	2	85	4.94N	0.34W	63	000	0000	040305	2-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	49K	612500	21 57.2 12 - .00
CAM.NAD.= 2.52N 1.29W SWING= 178. PHASE= 100. EMIS.ANG.= 60. CAM.RAD.= 1788.2 KM. SUN AZM= 92.6																
CENTRAL PART OF LAC 59 M.VAPORUM, HYGINUS & LINE OR HORIZON																
L 3	1	86	1.21N	1.60W	64	000	0000	073209	2-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	47K	77049	203 23.6 13 - .00
CAM.NAD.= 1.83N 1.33W SWING= 2. PHASE= 70. EMIS.ANG.= 24. CAM.RAD.= 1786.2 KM. SUN AZM= 91.8																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 3	2	86	1.21N	1.59W	64	000	0000	073210	2-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	47K	587500	203 23.6 13 - .00
CAM.NAD.= 1.83N 1.33W SWING= 3. PHASE= 70. EMIS.ANG.= 24. CAM.RAD.= 1786.2 KM. SUN AZM= 91.8																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 3	1	87	1.16N	1.46W	64	000	0000	073212	2-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	47K	77049	202 23.6 13 - .5
CAM.NAD.= 1.78N 1.20W SWING= 2. PHASE= 70. EMIS.ANG.= 24. CAM.RAD.= 1786.2 KM. SUN AZM= 91.8																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 3	2	87	1.16N	1.46W	64	000	0000	073212	2-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	47K	587500	202 23.5 13 - .87
CAM.NAD.= 1.78N 1.20W SWING= 2. PHASE= 70. EMIS.ANG.= 24. CAM.RAD.= 1786.2 KM. SUN AZM= 91.8																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 3	1	88	1.11N	1.33W	64	000	0000	073214	2-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	47K	77049	202 23.6 13 - .5
CAM.NAD.= 1.73N 1.07W SWING= 2. PHASE= 70. EMIS.ANG.= 24. CAM.RAD.= 1786.2 KM. SUN AZM= 91.8																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 3	2	88	1.11N	1.32W	64	000	0000	073214	2-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	47K	587500	202 23.5 13 - .87
CAM.NAD.= 1.73N 1.06W SWING= 2. PHASE= 70. EMIS.ANG.= 24. CAM.RAD.= 1786.2 KM. SUN AZM= 91.8																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																
L 3	1	89	1.06N	1.19W	64	000	0000	073216	2-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	47K	77049	202 23.6 13 - .5
CAM.NAD.= 1.68N 0.94W SWING= 1. PHASE= 70. EMIS.ANG.= 24. CAM.RAD.= 1786.2 KM. SUN AZM= 91.8																
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																

HIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS ON SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT; TUOC	SCALE AT PRIN. M=N, HI K=KM.	T I L T AZ	SUN SIDE, ANG. FR. VERT	ANG. LAP R. S
L 3	2	89	1.06N	1.19W	64	000 0000	073216	2-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	202	23.5 13	-.87
			CAM.NAD.= 1.68N	0.93W		SWING= 1.	PHASE= 70.	EMIS.ANG.= 24.	CAM.RAD.=	1786.2 KM.		SUN AZM= 91.8		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS						
L 3	1	90	1.01N	1.06W	64	000 0000	073219	2-18-67 LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	201	23.6 13	-.6
			CAM.NAD.= 1.63N	0.81W		SWING= 1.	PHASE= 70.	EMIS.ANG.= 24.	CAM.RAD.=	1785.2 KM.		SUN AZM= 91.8		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS						
L 3	2	90	1.01N	1.05W	64	000 0000	073219	2-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	201	23.5 13	-.87
			CAM.NAD.= 1.63N	0.83W		SWING= 1.	PHASE= 70.	EMIS.ANG.= 24.	CAM.RAD.=	1785.2 KM.		SUN AZM= 91.8		
								6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN						
L 3	1	91	0.96N	0.93W	64	000 0000	073221	2-18-67 LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	201	23.6 14	-.6
			CAM.NAD.= 1.58N	0.68W		SWING= 1.	PHASE= 70.	EMIS.ANG.= 24.	CAM.RAD.=	1785.2 KM.		SUN AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS						
L 3	2	91	0.96N	0.92W	64	000 0000	073221	2-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	201	23.5 14	-.87
			CAM.NAD.= 1.58N	0.67W		SWING= 1.	PHASE= 70.	EMIS.ANG.= 24.	CAM.RAD.=	1785.2 KM.		SUN AZM= 91.7		
								6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN						
L 3	1	92	0.91N	0.80W	64	000 0000	073223	2-18-67 LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	201	23.6 14	-.7
			CAM.NAD.= 1.53N	0.56W		SWING= 0.	PHASE= 70.	EMIS.ANG.= 24.	CAM.RAD.=	1785.2 KM.		SUN AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS						
L 3	2	92	0.91N	0.79W	64	000 0000	073223	2-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	201	23.5 14	-.87
			CAM.NAD.= 1.53N	0.55W		SWING= 1.	PHASE= 70.	EMIS.ANG.= 24.	CAM.RAD.=	1785.2 KM.		SUN AZM= 91.7		
								6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN						
L 3	1	93	0.86N	0.67W	64	000 0000	073225	2-18-67 LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	200	23.6 14	-.7
			CAM.NAD.= 1.48N	0.43W		SWING= 360.	PHASE= 70.	EMIS.ANG.= 24.	CAM.RAD.=	1785.2 KM.		SUN AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS						
L 3	2	93	0.86N	0.66W	64	000 0000	073225	2-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	201	23.5 14	-.88
			CAM.NAD.= 1.48N	0.42W		SWING= 0.	PHASE= 70.	EMIS.ANG.= 24.	CAM.RAD.=	1785.2 KM.		SUN AZM= 91.7		
								6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN						
L 3	1	94	0.92N	1.63W	65	000 0000	110110	2-18-67 LUNAR ORB HI. 610MM B&W	- NONE	45K	73770	204	10.2 15	-.00
			CAM.NAD.= 1.16N	1.52W		SWING= 3.	PHASE= 72.	EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN AZM= 91.8		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS						
L 3	2	94	0.92N	1.63W	65	000 0000	110110	2-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	45K	567500	204	10.1 15	-.00
			CAM.NAD.= 1.16N	1.52W		SWING= 3.	PHASE= 72.	EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN AZM= 91.8		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS						
L 3	1	95	0.87N	1.51W	65	000 0000	110112	2-18-67 LUNAR ORB HI. 610MM B&W	- NONE	45K	73770	203	10.2 15	-.7
			CAM.NAD.= 1.12N	1.41W		SWING= 2.	PHASE= 72.	EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS						

HIS SION	MAG RULL	PR-PRHOIO OR	PRIN.PI. LAT.	ORB LONG.	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. PT.	T I L T AZ	SUN ANG.	SIDE FR.	FAO. LAP
#	#	MAIN			(ESTIMATED)					M=N, KI K=KM.			VERT		%
L 3	2	95	0.87N	1.51W	65	000	110112	2-18-67 LUNAR ORB LO, F=80MM B&W	- NONE	45K	562500	203	10.1 15	- .87	
			CAM.NAD.= 1.12N	1.40W	SWING= 3.			PHASE= 72. EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN	AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS							
L 3	1	96	0.83N	1.39W	65	000	110114	2-18-67 LUNAR ORB HI, 610MM B&W	- NONE	45K	73770	202	10.1 15	- .7	
			CAM.NAD.= 1.03N	1.29W	SWING= 2.			PHASE= 72. EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN	AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS							
L 3	2	96	0.83N	1.39W	65	000	110114	2-18-67 LUNAR ORB LO, F=80MM B&W	- NONE	45K	562500	203	10.1 15	- .87	
			CAM.NAD.= 1.07N	1.28W	SWING= 2.			PHASE= 72. EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN	AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS							
L 3	1	97	0.78N	1.27W	65	000	110116	2-18-67 LUNAR ORB HI, 610MM B&W	- NONE	45K	73770	201	10.1 15	- .6	
			CAM.NAD.= 1.03N	1.17W	SWING= 1.			PHASE= 72. EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN	AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS							
L 3	2	97	0.78N	1.27W	65	000	110116	2-18-67 LUNAR ORB LO, F=80MM B&W	- NONE	45K	562500	202	10.1 15	- .87	
			CAM.NAD.= 1.03N	1.17W	SWING= 1.			PHASE= 72. EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN	AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS							
L 3	1	98	0.74N	1.15W	65	000	110118	2-18-67 LUNAR ORB HI, 610MM B&W	- NONE	45K	73770	201	10.1 15	- .5	
			CAM.NAD.= .99N	1.06W	SWING= 0.			PHASE= 72. EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN	AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS							
L 3	2	98	0.74N	1.15W	65	000	110119	2-18-67 LUNAR ORB LO, F=80MM B&W	- NONE	45K	562500	201	10.1 15	- .87	
			CAM.NAD.= .98N	1.05W	SWING= 1.			PHASE= 72. EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN	AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS							
L 3	1	99	0.69N	1.03W	65	000	110120	2-18-67 LUNAR ORB HI, 610MM B&W	- NONE	45K	73770	200	10.1 15	- .6	
			CAM.NAD.= .94N	0.94W	SWING= 359.			PHASE= 72. EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN	AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS							
L 3	2	99	0.69N	1.03W	65	000	110121	2-18-67 LUNAR ORB LO, F=80MM B&W	- NONE	45K	562500	200	10.1 15	- .87	
			CAM.NAD.= .94N	0.93W	SWING= 360.			PHASE= 72. EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN	AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS							
								6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN							
L 3	1	100	0.65N	0.91W	65	000	110122	2-18-67 LUNAR ORB HI, 610MM B&W	- NONE	45K	73770	199	10.1 15	- .5	
			CAM.NAD.= .90N	0.82W	SWING= 359.			PHASE= 72. EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN	AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS							
L 3	2	100	0.65N	0.91W	65	000	110123	2-18-67 LUNAR ORB LO, F=80MM B&W	- NONE	45K	562500	200	10.1 15	- .87	
			CAM.NAD.= .89N	0.82W	SWING= 359.			PHASE= 72. EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN	AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS							
								6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN							
L 3	1	101	0.60N	0.79W	65	000	110125	2-18-67 LUNAR ORB HI, 610MM B&W	- NONE	45K	73770	199	10.1 15	- .5	
			CAM.NAD.= .85N	0.71W	SWING= 350.			PHASE= 72. EMIS.ANG.= 10.	CAM.RAD.=	1784.2 KM.		SUN	AZM= 91.7		
								SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS							

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB M	GET TIMES-HR (ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE	SCALE AT PRIN. PT.	T I AZ	L T ANG.	SUN ANG.	SIDE, FWD. LAP R, S
L 3	2	101	0.60N CAM.NAD.= .85N SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS	0.79W 0.70W	65 *** SWING= 358.	110125 PHASE= 72.	2-18-67	LUNAR ORB LO.F=80MM B&W	- NONE CAM.RAD.= 1784.2 KM.	45K 562500	199	10.1	15	-0.87	
L 3	1	102	4.84N CAM.NAD.= 3.32N WESTERN PART OF LAC 59 M.VAPORUM, HYGINUS	9.07W 9.08W	66 *** SWING= 162.	142803 PHASE= 82.	2-18-67	LUNAR ORB HI. 610MM B&W	- NONE CAM.RAD.= 1791.2 KM.	52K 85246	360	41.2	9	-0.00	
L 3	2	102	4.84N CAM.NAD.= 3.32N WESTERN PART OF LAC 59 M.VAPORUM, HYGINUS	9.06W 9.07W	66 *** SWING= 162.	142803 PHASE= 82.	2-18-67	LUNAR ORB LO.F=80MM B&W	- NONE CAM.RAD.= 1791.2 KM.	52K 650000	360	41.3	9	-0.00	
L 3	1	103	0.93N CAM.NAD.= 1.41N S. W. PART OF LAC 59 M.VAPORUM, HYGINUS	6.21W 5.99W	67 *** SWING= 4.	175801 PHASE= 70.	2-18-67	LUNAR ORB HI. 610MM B&W	- NONE CAM.RAD.= 1785.2 KM.	46K 75410	204	19.0	14	-0.00	
L 3	2	103	0.93N CAM.NAD.= 1.40N S. W. PART OF LAC 59 M.VAPORUM, HYGINUS	6.21W 5.99W	67 *** SWING= 4.	175801 PHASE= 70.	2-18-67	LUNAR ORB LO.F=80MM B&W	- NONE CAM.RAD.= 1785.2 KM.	46K 575000	205	18.9	14	-0.00	
L 3	1	104	0.75N CAM.NAD.= 1.22N S. W. PART OF LAC 59 M.VAPORUM, HYGINUS	5.71W 5.51W	67 *** SWING= 2.	175809 PHASE= 70.	2-18-67	LUNAR ORB HI. 610MM B&W	- NONE CAM.RAD.= 1785.2 KM.	46K 75410	203	19.0	14	-0.00	
L 3	2	104	0.74N CAM.NAD.= 1.22N S. W. PART OF LAC 59 M.VAPORUM, HYGINUS	5.70W 5.50W	67 *** SWING= 2.	175809 PHASE= 70.	2-18-67	LUNAR ORB LO.F=80MM B&W	- NONE CAM.RAD.= 1784.2 KM.	45K 562500	203	18.9	14	-0.51	
L 3	1	105	0.56N CAM.NAD.= 1.03N S. W. PART OF LAC 59 M.VAPORUM, HYGINUS	5.21W 5.02W	67 *** SWING= 0.	175818 PHASE= 70.	2-18-67	LUNAR ORB HI. 610MM B&W	- NONE CAM.RAD.= 1784.2 KM.	45K 73770	201	18.9	15	-0.00	
L 3	2	105	0.56N CAM.NAD.= 1.03N S. W. PART OF LAC 59 M.VAPORUM, HYGINUS	5.20W 5.01W	67 *** SWING= 1.	175818 PHASE= 70.	2-18-67	LUNAR ORB LO.F=80MM B&W	- NONE CAM.RAD.= 1784.2 KM.	45K 562500	201	18.9	15	-0.50	
L 3	1	106	0.37N CAM.NAD.= .84N S. W. PART OF LAC 59 M.VAPORUM, HYGINUS	4.71W 4.53W	67 *** SWING= 359.	175826 PHASE= 70.	2-18-67	LUNAR ORB HI. 610MM B&W	- NONE CAM.RAD.= 1784.2 KM.	45K 73770	200	18.9	15	-0.00	
L 3	2	106	0.37N CAM.NAD.= .84N S. W. PART OF LAC 59 M.VAPORUM, HYGINUS	4.70W 4.52W	67 *** SWING= 359.	175826 PHASE= 70.	2-18-67	LUNAR ORB LO.F=80MM B&W	- NONE CAM.RAD.= 1784.2 KM.	45K 562500	200	18.9	15	-0.50	
L 3	2	107	0.37S CAM.NAD.= .24S N. W. PART OF LAC 77 PTOLMAEUS, KLEIN	5.59W 5.55W	69 *** SWING= 357.	005616 PHASE= 71.	2-19-67	LUNAR ORB LO.F=80MM B&W	- NONE CAM.RAD.= 1783.2 KM.	44K 550000	199	5.1	18	-0.00	

MIS SION	MAG ROLL	FR #	PHOTO OR MAIN	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES-HR	GMT H SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN.	T AZ	L ANG.	SUN ANG.	SIDE FWD.	
#	#	#	#	#	#	#	(I=ESTIMATED)					M=N.MI K=KM.	PT.		FR.	VERT	LAP 8. 8	
L 4	2	91	42.03N	25.72E	17	***	061439	5-17-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2947K	36837500	100	2.1	24	-..
CAM.NAD.= 42.80N 20.90E SWING= 265. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4686.2 KM. SUN AZM=112.5																		
LAC 26 EUDOXUS,BURG ; >1/2 MOON SPHERE ; LAC 1 N.POLE NEARSIDE BYRD,PEAR6 LAC 16																		
L 4	1	96	15.18S	10.67E	18	***	171241	5-17-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2722K	4462295	138	.6	22	-.46
CAM.NAD.= 14.45S 9.99E SWING= 324. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 4461.2 KM. SUN AZM= 83.2																		
LAC 78 THEOPHILUS ; LAC 77 PTOLMAEUS ; LAC 95 PURBACH,AR ; LAC 96 ALTAI SCARP,GEGER & LAC 59 M.VAPORUM,HYG																		
L 4	1	97	12.97N	9.66E	18	***	174328	5-17-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2705K	4434426	245	1.4	22	-.17
CAM.NAD.= 13.90N 11.76E SWING= 60. PHASE= 65. EMIS.ANG.= 4. CAM.RAD.= 4444.2 KM. SUN AZM= 94.7																		
LAC 59 M.VAPORUM,HYGINUS ; LAC 60 J.CAESAR,SABINE,JANSEN ; LAC 42 M.SERENITY,DAWES & LAC 41 APENNINES,HA																		
L 4	2	97	12.97N	9.66E	18	***	174328	5-17-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2705K	33812500	245	1.4	22	-.50
CAM.NAD.= 13.90N 11.76E SWING= 60. PHASE= 65. EMIS.ANG.= 4. CAM.RAD.= 4444.2 KM. SUN AZM= 94.7																		
LAC 59 M.VAPORUM,HYGINUS ; >1/2 MOON SPHERE ; LAC 12 PLATO,ALPI ; LAC 80 LANGRENUS,M.FERT. & LAC 114 RHETA,JA																		
L 4	1	101	15.19S	3.83E	19	***	051444	5-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2720K	4459016	150	.5	21	-.45
CAM.NAD.= 14.45S 3.38E SWING= 336. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 4459.2 KM. SUN AZM= 83.4																		
EASTERN PART OF LAC 77 PTOLMAEUS ; EASTERN PART OF LAC 95 PURBACH,AR ; LAC 59 M.VAPORUM,HYGINUS & LAC 96 ALTAI SCARP,G																		
L 4	1	102	12.96N	3.63E	19	***	054527	5-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2699K	4424590	237	1.1	22	-.38
CAM.NAD.= 13.88N 5.14E SWING= 53. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4438.2 KM. SUN AZM= 94.7																		
EASTERN PART OF LAC 59 M.VAPORUM,HYGINUS ; EASTERN PART OF LAC 41 APENNINES, & N. E. PART OF LAC 77 PTOLMAEUS,KL																		
L 4	2	102	12.96N	3.63E	19	***	054527	5-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2699K	33737500	237	1.1	22	-.15
CAM.NAD.= 13.89N 5.14E SWING= 53. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4438.2 KM. SUN AZM= 94.7																		
LAC 59 M.VAPORUM,HYGINUS ; >1/4 MOONS SPHERE ; LAC 58 COPERNICUS,REINHOLD & LAC 112 TYCHO,STOFL																		
L 4	2	103	41.82N	11.28E	19	***	061816	5-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2927K	36587500	107	1.7	22	-...
CAM.NAD.= 42.76N 7.57E SWING= 272. PHASE= 72. EMIS.ANG.= 5. CAM.RAD.= 4686.2 KM. SUN AZM=110.7																		
LAC 26 EUDOXUS,BURG ; >1/2 MOON SPHERE ; LAC 1 N.POLE NEARSIDE BYRD,PEAR6 LAC 6																		
L 4	2	107	42.40S	6.45E	20	***	164442	5-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2982K	37275000	94	5.0	22	-...
CAM.NAD.= 42.26S 5.42E SWING= 293. PHASE= 81. EMIS.ANG.= 14. CAM.RAD.= 4721.2 KM. SUN AZM= 67.9																		
LAC 112 TYCHO,STOFLER ; >1/2 MOON SPHERE ; LAC 59 M.VAPORUM,HYGINUS & LAC 79 COLOMBO,NE,M																		
L 4	1	108	14.26S	2.36W	20	***	171651	5-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2719K	4457377	77	.5	21	-.43
CAM.NAD.= 14.45S 3.17W SWING= 262. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4458.2 KM. SUN AZM= 83.8																		
CENTRAL PART OF LAC 77 PTOLMAEUS,KLEIN ; CENTRAL PART OF LAC 95 PURBACH,AR & S. W. PART OF LAC 59 M.VAPORUM,HY																		
L 4	1	109	13.79N	3.58W	20	***	174732	5-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2693K	4414754	267	1.3	21	-. 7
CAM.NAD.= 13.89N 1.48W SWING= 82. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4432.2 KM. SUN AZM= 94.7																		
WESTERN PART OF LAC 59 M.VAPORUM,HYGINUS ; WESTERN PART OF LAC 41 APENNINES, & NORTHERN PART OF LAC 77 PTOLMAEUS,KL																		
L 4	2	109	13.79N	3.58W	20	***	174732	5-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2693K	33662500	267	1.3	21	-.67
CAM.NAD.= 13.89N 1.48W SWING= 82. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4432.2 KM. SUN AZM= 94.7																		
LAC 59 M.VAPORUM,HYGINUS ; >1/2 MOON SPHERE ; LAC 12 PLATO,ALPINE VAL. & LAC 61 TARUNTIUS,LY																		

HIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT1 SCALE AT	T 1 L T	SUN SIDE			
SUN HULL	OR	LAT.	#	TIMES-HR M SEC	(? = ESTIMATED)			SENSOR	AND FILTER	ITUDE PRIN.	AZ	ANG. ANG. FWD.			
#	#	MAIN	LONG.					TYPE		M=N, MI K=KM.	PT.	FR. VERT	LAP S. S		
L 4	1	113	14.64S	9.51W	21	000	051900	5-19-67 LUNAR ORB HI. 610MM B6W	-	NONE	2718K	4455738	123	2.20	-0.47
CAM. RAD. = 14.45S 9.81W SWING = 310. PHASE = 70. EMIS. ANG. = 1. CAM. RAD. = 4457.2 KM. SUN AZM = 83.9															
LAC 77 PIOLMAEUS, 1 LAC 76 RHPHAEUS M 1 LAC 95 PURBACH, AR 1 LAC 94 PITATUS, M. NOBIUM 6 LAC 58 COPERNICUS, RE															
L 4	1	114	13.46N	10.97W	21	000	054938	5-19-67 LUNAR ORB HI. 610MM B6W	-	NONE	2487K	4404918	261	1.819	-0.4
CAM. RAD. = 13.89N 8.09W SWING = 77. PHASE = 66. EMIS. ANG. = 5. CAM. RAD. = 4426.2 KM. SUN AZM = 94.2															
LAC 58 COPERNICUS, REINHOLD 1 LAC 59 M.VAPORUM, HYGINUS 1 LAC 41 APENNINES, HAEMUS 6 LAC 40 TIMOCHARIS, L															
L 4	2	131	36.50S	23.47W	24	000	165252	5-20-67 LUNAR ORB LO. F=80MM B6W	-	NONE	2999K	37487500	52	5.020	-0.62
CAM. RAD. = 42.20S 32.12W SWING = 251. PHASE = 83. EMIS. ANG. = 14. CAM. RAD. = 4738.2 KM. SUN AZM = 74.0															
LAC 111 WILHELM, ELGEN, MEE 1 0.51/2 MOON SPHERE 1 LAC 144 SCOTT, S. POLF NEARSIDE 56 LAC 57 KEPLER, ENCKE															
L 5	1	94	7.36N	5.90E	47	000	030242	8-14-67 LUNAR ORB HI. 610MM B6W	-	NONE	100K	163934	274	19.118	-0.00
CAM. RAD. = 7.26N 7.05E SWING = 180. PHASE = 51. EMIS. ANG. = 20. CAM. RAD. = 1839.2 KM. SUN AZM = 90.9															
EASTERN PART OF LAC 59 M.VAPORUM, HYGINUS															
L 5	2	94	7.37N	5.89E	47	000	030242	8-14-67 LUNAR ORB LO. F=80MM B6W	-	NONE	100K	1250000	274	19.218	-0.00
CAM. RAD. = 7.27N 7.05E SWING = 180. PHASE = 51. EMIS. ANG. = 20. CAM. RAD. = 1839.2 KM. SUN AZM = 90.9															
EASTERN PART OF LAC 59 M.VAPORUM, HYGINUS															
L 5	1	95	7.65N	5.92E	47	000	030246	8-14-67 LUNAR ORB HI. 610MM B6W	-	NONE	100K	163934	275	19.118	-0.8
CAM. RAD. = 7.54N 7.07E SWING = 181. PHASE = 51. EMIS. ANG. = 20. CAM. RAD. = 1839.2 KM. SUN AZM = 91.0															
EASTERN PART OF LAC 59 M.VAPORUM, HYGINUS															
L 5	2	95	7.66N	5.91E	47	000	030246	8-14-67 LUNAR ORB LO. F=80MM B6W	-	NONE	100K	1250000	275	19.218	-0.87
CAM. RAD. = 7.54N 7.07E SWING = 181. PHASE = 51. EMIS. ANG. = 20. CAM. RAD. = 1839.2 KM. SUN AZM = 91.0															
EASTERN PART OF LAC 59 M.VAPORUM, HYGINUS															
L 5	1	96	7.93N	5.94E	47	000	030251	8-14-67 LUNAR ORB HI. 610MM B6W	-	NONE	100K	163934	276	19.118	-0.8
CAM. RAD. = 7.81N 7.09E SWING = 182. PHASE = 51. EMIS. ANG. = 20. CAM. RAD. = 1839.2 KM. SUN AZM = 91.1															
EASTERN PART OF LAC 59 M.VAPORUM, HYGINUS															
L 5	2	96	7.94N	5.93E	47	000	030251	8-14-67 LUNAR ORB LO. F=80MM B6W	-	NONE	100K	1250000	276	19.318	-0.87
CAM. RAD. = 7.82N 7.09E SWING = 182. PHASE = 51. EMIS. ANG. = 20. CAM. RAD. = 1839.2 KM. SUN AZM = 91.1															
EASTERN PART OF LAC 59 M.VAPORUM, HYGINUS															
L 5	1	97	8.22N	5.96E	47	000	030256	8-14-67 LUNAR ORB HI. 610MM B6W	-	NONE	100K	163934	277	19.118	-0.8
CAM. RAD. = 8.08N 7.11E SWING = 183. PHASE = 51. EMIS. ANG. = 20. CAM. RAD. = 1839.2 KM. SUN AZM = 91.2															
EASTERN PART OF LAC 59 M.VAPORUM, HYGINUS															
L 5	2	97	8.23N	5.95E	47	000	030256	8-14-67 LUNAR ORB LO. F=80MM B6W	-	NONE	100K	1250000	277	19.318	-0.87
CAM. RAD. = 8.09N 7.11E SWING = 183. PHASE = 51. EMIS. ANG. = 20. CAM. RAD. = 1839.2 KM. SUN AZM = 91.2															
EASTERN PART OF LAC 59 M.VAPORUM, HYGINUS															
L 5	1	108	0.05S	1.10W	51	000	154446	8-14-67 LUNAR ORB HI. 610MM B6W	-	NONE	97K	159016	269	10.218	-0.00
CAM. RAD. = 0.05S 0.02W SWING = 175. PHASE = 61. EMIS. ANG. = 11. CAM. RAD. = 1836.2 KM. SUN AZM = 88.5															
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PIOLMAEUS, KLEIN															

SUN	MAG	FR. PHOTO OR MAIN #	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR	GHI M SEC (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=N.MI K=KM.	T I L T A7 ANG. FR. VERT	SUN SIDE. ANG. LAP R	
													PHASE
L 5	2	108	0.04S 1.10W	51	000	0000	154446	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	97K 1212500	270 10.3 18	- .00
CAM.NAD.= .05S 0.52W SWING= 176. PHASE= 61. EMIS.ANG.= 11. CAM.RAD.= 1836.2 KM. SUN AZM= 88.5													
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN													
L 5	1	107	0.22N 1.07W	51	000	0000	154450	8-14-67	LUNAR ORB HI. 610MM B&W	- NONE	97K 159016	271 10.1 18	- .7
CAM.NAD.= .20N 0.50W SWING= 177. PHASE= 61. EMIS.ANG.= 11. CAM.RAD.= 1836.2 KM. SUN AZM= 88.6													
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 5	2	109	0.23N 1.08W	51	000	0000	154451	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	97K 1212500	271 10.3 18	- .87
CAM.NAD.= .21N 0.50W SWING= 177. PHASE= 61. EMIS.ANG.= 11. CAM.RAD.= 1836.2 KM. SUN AZM= 88.6													
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN													
L 5	1	110	0.49N 1.05W	51	000	0000	154455	8-14-67	LUNAR ORB HI. 610MM B&W	- NONE	97K 159016	272 10.1 18	- .7
CAM.NAD.= .46N 0.48W SWING= 178. PHASE= 61. EMIS.ANG.= 11. CAM.RAD.= 1836.2 KM. SUN AZM= 88.7													
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 5	2	110	0.50N 1.06W	51	000	0000	154455	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	97K 1212500	273 10.3 18	- .87
CAM.NAD.= .47N 0.48W SWING= 179. PHASE= 61. EMIS.ANG.= 11. CAM.RAD.= 1836.2 KM. SUN AZM= 88.7													
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN													
L 5	1	111	0.76N 1.03W	51	000	0000	154459	8-14-67	LUNAR ORB HI. 610MM B&W	- NONE	97K 159016	274 10.1 18	- .7
CAM.NAD.= .72N 0.46W SWING= 180. PHASE= 61. EMIS.ANG.= 11. CAM.RAD.= 1836.2 KM. SUN AZM= 88.7													
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 5	2	111	0.77N 1.04W	51	000	0000	154500	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	97K 1212500	274 10.3 18	- .87
CAM.NAD.= .73N 0.46W SWING= 180. PHASE= 61. EMIS.ANG.= 11. CAM.RAD.= 1836.2 KM. SUN AZM= 88.7													
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN													
L 5	2	112	0.13S 1.12W	52	000	0000	185549	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	98K 1225000	96 19.6 19	- .00
CAM.NAD.= .00 2.27W SWING= 3. PHASE= 91. EMIS.ANG.= 21. CAM.RAD.= 1837.2 KM. SUN AZM= 88.4													
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 5	1	113	0.15N 1.09W	52	000	0000	185554	8-14-67	LUNAR ORB HI. 610MM B&W	- NONE	98K 140656	95 19.8 19	- .6
CAM.NAD.= .26N 2.25W SWING= 2. PHASE= 91. EMIS.ANG.= 21. CAM.RAD.= 1837.2 KM. SUN AZM= 88.5													
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 5	2	113	0.15N 1.10W	52	000	0000	185554	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	98K 1225000	95 19.6 19	- .87
CAM.NAD.= .27N 2.25W SWING= 2. PHASE= 91. EMIS.ANG.= 21. CAM.RAD.= 1837.2 KM. SUN AZM= 88.5													
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN													
L 5	1	114	0.43N 1.07W	52	000	0000	185558	8-14-67	LUNAR ORB HI. 610MM B&W	- NONE	97K 159016	95 19.8 20	- .6
CAM.NAD.= .54N 2.23W SWING= 1. PHASE= 91. EMIS.ANG.= 21. CAM.RAD.= 1836.2 KM. SUN AZM= 88.1													
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS													
L 5	2	114	0.44N 1.08W	52	000	0000	185559	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	97K 1212500	95 19.6 19	- .87
CAM.NAD.= .54N 2.22W SWING= 1. PHASE= 91. EMIS.ANG.= 21. CAM.RAD.= 1836.2 KM. SUN AZM= 88.6													
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN													



MIS SION	MAG #	FR. PHOTO OR MAIN	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUBE PRIN. M=N.MT PT. K=KM.	T I L T AZ ANG. ANG. FR. VERT	SUN SIDE, FWD. LAP R. R
L 5	1	115	0.72N 0.81N	1.05W 2.20W	52 ***	0000	185603	8-14-67 LUNAR	ORB HI. 610MM B&W EMIS-ANG.= 21.	- NONE CAM-RAD.= 1836.2 KM.	97K 159016 SUN AZM= 88.7	- .6
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 5	2	115	0.73N 0.82N	1.06W 2.20W	52 ***	0000	185603	8-14-67 LUNAR	ORB LO.F=80MM B&W EMIS-ANG.= 21.	- NONE CAM-RAD.= 1836.2 KM.	97K 1212500 SUN AZM= 88.7	- .87
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS												
L 5	1	120	12.40N 12.41N	4.01W 4.77W	54 ***	0000	012130	8-15-67 LUNAR	ORB HI. 610MM B&W EMIS-ANG.= 13.	- NONE CAM-RAD.= 1845.2 KM.	106K 173770 SUN AZM= 92.9	- .00
N. W. PART OF LAC 59 M.VAPORUM, HYGINUS												
L 5	2	120	12.41N 12.42N	4.02W 4.77W	54 ***	0000	012130	8-15-67 LUNAR	ORB LO.F=80MM B&W EMIS-ANG.= 13.	- NONE CAM-RAD.= 1845.2 KM.	106K 1325000 SUN AZM= 92.9	- .00
N. W. PART OF LAC 59 M.VAPORUM, HYGINUS												
L 5	1	121	12.69N 12.69N	3.99W 4.75W	54 ***	0000	012134	8-15-67 LUNAR	ORB HI. 610MM B&W EMIS-ANG.= 13.	- NONE CAM-RAD.= 1845.2 KM.	106K 173770 SUN AZM= 93.0	- .8
N. W. PART OF LAC 59 M.VAPORUM, HYGINUS												
L 5	2	121	12.70N 12.76N	3.99W 4.75W	54 ***	0000	012135	8-15-67 LUNAR	ORB LO.F=80MM B&W EMIS-ANG.= 13.	- NONE CAM-RAD.= 1845.2 KM.	106K 1325000 SUN AZM= 93.0	- .87
N. W. PART OF LAC 59 M.VAPORUM, HYGINUS												
L 5	1	122	12.99N 12.97N	3.96W 4.73W	54 ***	0000	012139	8-15-67 LUNAR	ORB HI. 610MM B&W EMIS-ANG.= 13.	- NONE CAM-RAD.= 1846.2 KM.	107K 175410 SUN AZM= 93.2	- .8
N. W. PART OF LAC 59 M.VAPORUM, HYGINUS												
L 5	2	122	13.00N 12.98N	3.96W 4.73W	54 ***	0000	012139	8-15-67 LUNAR	ORB LO.F=80MM B&W EMIS-ANG.= 13.	- NONE CAM-RAD.= 1846.2 KM.	107K 1337500 SUN AZM= 93.2	- .87
N. W. PART OF LAC 59 M.VAPORUM, HYGINUS												
L 5	1	123	13.29N 13.26N	3.93W 4.70W	54 ***	0000	012144	8-15-67 LUNAR	ORB HI. 610MM B&W EMIS-ANG.= 13.	- NONE CAM-RAD.= 1846.2 KM.	107K 175410 SUN AZM= 93.3	- .7
N. W. PART OF LAC 59 M.VAPORUM, HYGINUS												
L 5	2	123	13.30N 13.26N	3.93W 4.70W	54 ***	0000	012144	8-15-67 LUNAR	ORB LO.F=80MM B&W EMIS-ANG.= 13.	- NONE CAM-RAD.= 1846.2 KM.	107K 1337500 SUN AZM= 93.3	- .87
N. W. PART OF LAC 59 M.VAPORUM, HYGINUS												
L 5	2	133	11.50N 11.48N	10.77W 10.07W	57 ***	0000	105416	8-15-67 LUNAR	ORB LO.F=80MM B&W EMIS-ANG.= 12.	- NONE CAM-RAD.= 1842.2 KM.	103K 1287500 SUN AZM= 92.2	- .00
N. E. PART OF LAC 58 COPERNICUS, REINHOLD												
L 5	2	134	12.67N 12.58N	10.68W 9.98W	57 ***	0000	105435	8-15-67 LUNAR	ORB LO.F=80MM B&W EMIS-ANG.= 12.	- NONE CAM-RAD.= 1844.2 KM.	105K 1312500 SUN AZM= 92.6	- .51
N. E. PART OF LAC 58 COPERNICUS, REINHOLD												

MIS SION	MAG #	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN.	AT PT.	T ANG.	I ANG.	L ANG.	T FWD.	SUN SIDE.
L 5	1	135	13.88N	10.58W	57	***	****	105455	8-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	106K	173770	283	11.3	18	-.	***
CAM. RAD. = 13.72N 9.88W SWING = 189. PHASE = 60. EMIS. ANG. = 12. CAM. RAD. = 1845.2 KM. SUN AZM = 93.0																			
N. E. PART OF LAC 58 COPERNICUS, REINHOLD & N. W. PART OF LAC 59 M.VAPORUM, HYGINUS																			
L 5	2	135	13.89N	10.59W	57	***	****	105456	8-15-67	LUNAR ORB LO. F=80MM B&W	-	NONE	106K	1325000	283	11.4	18	-.	49
CAM. RAD. = 13.73N 9.87W SWING = 189. PHASE = 60. EMIS. ANG. = 12. CAM. RAD. = 1845.2 KM. SUN AZM = 93.0																			
N. E. PART OF LAC 58 COPERNICUS, REINHOLD & N. W. PART OF LAC 59 M.VAPORUM, HYGINUS																			
L 5	1	136	15.15N	10.49W	57	***		5516	8-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	108K	177049	289	11.5	18	-.	***
CAM. RAD. = 14.91N 9.78W SWING = 75. PHASE = 60. EMIS. ANG. = 12. CAM. RAD. = 1847.2 KM. SUN AZM = 93.5																			
N. E. PART OF LAC 58 COPERNICUS, REINHOLD & N. W. PART OF LAC 59 M.VAPORUM, HYGINUS																			
L 5	2	136	15.16N	10.50W	57	***	****	105517	8-15-67	LUNAR ORB LO. F=80MM B&W	-	NONE	108K	1350000	289	11.7	18	-.	48
CAM. RAD. = 14.92N 9.78W SWING = 195. PHASE = 60. EMIS. ANG. = 12. CAM. RAD. = 1847.2 KM. SUN AZM = 93.5																			
N. E. PART OF LAC 58 COPERNICUS, REINHOLD ; N. W. PART OF LAC 59 M.VAPORUM, HYGINUS ; LAC 40 TIMOCHARIS & LAC 41 AP																			

TOTAL PHOTOS IN THIS GROUP = 205

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (O) = NO INFO      M = APPROXIMATELY      NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; HAU= MAUREN; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIUGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

L I	Z	MAG	FR. PHOTO OR MAIN	PRIN. PT. OR LAT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE	SCALE AT PRIN. PT.	T I L T			SUN SIDE.			
													AZ	ANG.	ANG.				
												MM.MI	PT.	FR.	LAP				
												K=KM.		VERT	%				
L I	2	42*	4.35N	31.87E	43 ***	****	041441	8-21-66	LUNAR ORB LO.F=80MM B&W	-	NONE	265K	3312500	259	16.5	1	-.00		
CAM.NAD.= 4.82N 34.44E SWING= 80.												PHASE= 70. EMIS.ANG.= 19.				CAM.RAD.= 2004.2 KM.		SUN AZM= 88.6	
WESTERN PART OF LAC 61 TARUNTIUS,LYELL												EASTERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN				6 LAC 79 COLOMBUS, NE			
L I	2	46	3.19N	31.21E	47 ***	****	182303	8-21-66	LUNAR ORB LO.F=80MM B&W	-	NONE	86K	1075000	232	14.8	7	-.00		
CAM.NAD.= 3.65N 31.81E SWING= 51.												PHASE= 70. EMIS.ANG.= 15.				CAM.RAD.= 1825.2 KM.		SUN AZM= 88.9	
S. W. PART OF LAC 61 TARUNTIUS,LYELL												S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN							
L I	2	84	3.00N	14.63E	56 ***	****	014426	8-23-66	LUNAR ORB LO.F=80MM B&W	-	NONE	80K	1000000	232	15.4	7	-.00		
CAM.NAD.= 3.45N 15.21E SWING= 51.												PHASE= 70. EMIS.ANG.= 16.				CAM.RAD.= 1819.2 KM.		SUN AZM= 88.8	
S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																			
L I	2	85	0.54N	25.07E	58 ***	****	084621	8-23-66	LUNAR ORB LO.F=80MM B&W	-	NONE	57K	712500	12	4.21		-.00		
CAM.NAD.= .52N 25.07E SWING= 180.												PHASE= 69. EMIS.ANG.= 0.				CAM.RAD.= 1796.2 KM.		SUN AZM= 88.4	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN												N. E. PART OF LAC 78 THEOPHILUS, KANT							
L I	2	86*	0.50N	25.22E	58 ***	****	084624	8-23-66	LUNAR ORB LO.F=80MM B&W	-	NONE	57K	712500	32	4.21		-.88		
CAM.NAD.= .49N 25.21E SWING= 200.												PHASE= 69. EMIS.ANG.= 1.				CAM.RAD.= 1796.2 KM.		SUN AZM= 88.6	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN												N. E. PART OF LAC 78 THEOPHILUS, KANT							
L I	2	87	0.47N	25.37E	58 ***	****	084626	8-23-66	LUNAR ORB LO.F=80MM B&W	-	NONE	57K	712500	48	4.21		-.88		
CAM.NAD.= .46N 25.36E SWING= 216.												PHASE= 69. EMIS.ANG.= 1.				CAM.RAD.= 1796.2 KM.		SUN AZM= 88.6	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN												N. E. PART OF LAC 78 THEOPHILUS, KANT							
L I	2	88	0.44N	25.52E	58 ***	****	084629	8-23-66	LUNAR ORB LO.F=80MM B&W	-	NONE	57K	712500	59	4.21		-.88		
CAM.NAD.= .43N 25.51E SWING= 227.												PHASE= 69. EMIS.ANG.= 1.				CAM.RAD.= 1796.2 KM.		SUN AZM= 88.6	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN												N. E. PART OF LAC 78 THEOPHILUS, KANT							
L I	2	89	0.41N	25.67E	58 ***	****	084631	8-23-66	LUNAR ORB LO.F=80MM B&W	-	NONE	56K	700000	67	4.21		-.88		
CAM.NAD.= .40N 25.65E SWING= 235.												PHASE= 69. EMIS.ANG.= 1.				CAM.RAD.= 1795.2 KM.		SUN AZM= 88.5	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN												N. E. PART OF LAC 78 THEOPHILUS, KANT							
L I	2	90	0.37N	25.83E	58 ***	****	084634	8-23-66	LUNAR ORB LO.F=80MM B&W	-	NONE	56K	700000	73	4.22		-.88		
CAM.NAD.= .36N 25.80E SWING= 241.												PHASE= 69. EMIS.ANG.= 1.				CAM.RAD.= 1795.2 KM.		SUN AZM= 88.5	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN												N. E. PART OF LAC 78 THEOPHILUS, KANT							

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. M=N.MI K=KM.	T I L T AZ	SUN ANG.	SIDE. ANG. FR. VERT	FWD. LAP S. E.
L 1	2	91	0.34N	25.98E	58	000	0000	084636	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	77	1.0 22	- .87	
CAM.NAD.= .33N 25.95E SWING= 245. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1795.2 KM. SUN AZM= 88.5																	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 7R THEOPHILUS, KANT																	
L 1	2	92	0.31N	26.13E	58	000	0000	084638	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	80	1.1 22	- .88	
CAM.NAD.= .30N 26.09E SWING= 248. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1795.2 KM. SUN AZM= 88.5																	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 7R THEOPHILUS, KANT																	
L 1	2	93	0.27N	26.28E	58	000	0000	084641	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	83	1.3 22	- .87	
CAM.NAD.= .27N 26.24E SWING= 251. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1795.2 KM. SUN AZM= 88.5																	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 7R THEOPHILUS, KANT																	
L 1	2	94	0.24N	26.43E	58	000	0000	084643	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	85	1.4 22	- .87	
CAM.NAD.= .24N 26.38E SWING= 253. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1795.2 KM. SUN AZM= 88.5																	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 7R THEOPHILUS, KANT																	
L 1	2	95	0.21N	26.58E	58	000	0000	084646	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	86	1.6 22	- .87	
CAM.NAD.= .21N 26.53E SWING= 254. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 1795.2 KM. SUN AZM= 88.5																	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 7R THEOPHILUS, KANT																	
L 1	2	96	0.18N	26.73E	58	000	0000	084648	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	88	1.7 22	- .87	
CAM.NAD.= .17N 26.67E SWING= 256. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 1795.2 KM. SUN AZM= 88.4																	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 7R THEOPHILUS, KANT																	
L 1	2	97	0.14N	26.88E	58	000	0000	084651	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	89	1.8 23	- .87	
CAM.NAD.= .14N 26.82E SWING= 257. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 1795.2 KM. SUN AZM= 88.4																	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 7R THEOPHILUS, KANT																	
L 1	2	98	0.11N	27.03E	58	000	0000	084653	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	90	2.0 23	- .87	
CAM.NAD.= .11N 26.97E SWING= 258. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 1795.2 KM. SUN AZM= 88.4																	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 7R THEOPHILUS, KANT																	
L 1	2	99	0.08N	27.18E	58	000	0000	084656	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	91	2.1 23	- .87	
CAM.NAD.= .08N 27.11E SWING= 259. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 1795.2 KM. SUN AZM= 88.4																	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 7R THEOPHILUS, KANT																	
L 1	2	100	0.05N	27.33E	58	000	0000	084658	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	91	2.3 23	- .87	
CAM.NAD.= .05N 27.26E SWING= 259. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 1795.2 KM. SUN AZM= 88.4																	
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 7R THEOPHILUS, KANT																	
L 1	2	105	0.53N	11.56E	65	000	0000	090932	8-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	55K	687500	284	1.9 20	- .00	
CAM.NAD.= .51N 11.62E SWING= 92. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1794.2 KM. SUN AZM= 88.6																	
S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. W. PART OF LAC 7R THEOPHILUS, KANT																	
L 1	2	106	0.41N	12.13E	65	000	0000	090941	8-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	54K	675000	284	1.3 20	- .53	
CAM.NAD.= .39N 12.17E SWING= 92. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 1793.2 KM. SUN AZM= 88.5																	
S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. W. PART OF LAC 7R THEOPHILUS, KANT																	

MIS SION	HAG ROLL	FR. PHOTO ON	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR	GHT H SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN.	AT PT.	T I L T ANG. FR.	SUN SIDE. ANG. LAP
"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
L 1	2	107	U-28N	12-70E	65	000 090950	8-24-66	LUNAR ORB LO.F=80MM B6W	- NONE	54K	675000	287	07 21	-0.52
CAM.NAD.= 0.28N 12-72E SWING= 95. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 1793.2 KM. N. W. PART OF LAC 78 THEOPHILUS, KANT														
L 1	2	108	U-16N	13-26E	65	000 090959	8-24-66	LUNAR ORB LO.F=80MM B6W	- NONE	53K	662500	372	02 21	-0.52
CAM.NAD.= 0.16N 13-27E SWING= 110. PHASE= 68. EMIS.ANG.= 0. CAM.RAD.= 1792.2 KM. N. W. PART OF LAC 78 THEOPHILUS, KANT														
L 1	2	109	U-04N	13-82E	65	000 091008	8-24-66	LUNAR ORB LO.F=80MM B6W	- NONE	53K	662500	92	04 22	-0.52
CAM.NAD.= 0.04N 13-81E SWING= 260. PHASE= 68. EMIS.ANG.= 0. CAM.RAD.= 1792.2 KM. N. W. PART OF LAC 78 THEOPHILUS, KANT														
L 1	2	110	U-08S	14-34E	65	000 091017	8-24-66	LUNAR ORB LO.F=80MM B6W	- NONE	53K	662500	98	09 23	-0.52
CAM.NAD.= 0.08S 14-35E SWING= 266. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 1792.2 KM. S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN														
L 1	2	111	U-20S	14-94E	65	000 091026	8-24-66	LUNAR ORB LO.F=80MM B6W	- NONE	53K	662500	99	10 23	-0.52
CAM.NAD.= 0.19S 14-95E SWING= 267. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 1792.2 KM. S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN														
L 1	2	112	U-32S	15-48E	65	000 091035	8-24-66	LUNAR ORB LO.F=80MM B6W	- NONE	52K	650000	100	20 24	-0.53
CAM.NAD.= 0.31S 15-42E SWING= 268. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN														
L 2	1	43	4-54N	20-89E	59	000 154422	11-19-66	LUNAR ORB HI. 610MM B6W	- NONE	50K	81967	285	10 13	-0.00
CAM.NAD.= 4-53N 20-93E SWING= 94. PHASE= 76. EMIS.ANG.= 1. CAM.RAD.= 1789.2 KM. SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN														
L 2	2	43	4-54N	20-90E	59	000 154422	11-19-66	LUNAR ORB LO.F=80MM B6W	- NONE	50K	625000	290	10 13	-0.00
CAM.NAD.= 4-53N 20-94E SWING= 99. PHASE= 76. EMIS.ANG.= 1. CAM.RAD.= 1789.2 KM. SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN														
L 2	1	44	4-51N	21-03E	59	000 154424	11-19-66	LUNAR ORB HI. 610MM B6W	- NONE	50K	81967	285	10 13	-0.9
CAM.NAD.= 4-50N 21-06E SWING= 94. PHASE= 76. EMIS.ANG.= 1. CAM.RAD.= 1789.2 KM. SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN														
L 2	2	44	4-51N	21-04E	59	000 154424	11-19-66	LUNAR ORB LO.F=80MM B6W	- NONE	50K	625000	291	10 13	-0.88
CAM.NAD.= 4-50N 21-07E SWING= 100. PHASE= 76. EMIS.ANG.= 1. CAM.RAD.= 1789.2 KM. SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN														
L 2	1	45	4-49N	21-16E	59	000 154426	11-19-66	LUNAR ORB HI. 610MM B6W	- NONE	50K	81967	286	10 13	-0.8
CAM.NAD.= 4-48N 21-19E SWING= 95. PHASE= 76. EMIS.ANG.= 1. CAM.RAD.= 1789.2 KM. SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN														
L 2	2	45	4-49N	21-17E	59	000 154427	11-19-66	LUNAR ORB LO.F=80MM B6W	- NONE	50K	625000	292	10 13	-0.88
CAM.NAD.= 4-47N 21-20E SWING= 101. PHASE= 76. EMIS.ANG.= 1. CAM.RAD.= 1789.2 KM. SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN														

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR  
LAC 60 J.CAESAR,SABINE,JANSEN

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HIS	MAG	FR,PHOTO	PRIN,PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE,	
SUN ROLL	OR	LAT.	#	TIMES-HR	M SEC			SENSOR	AND FILTER	TUDE PRIN.	AZ	ANG. ANG. FWD.	
#	#	MAIN	LONG.	(ESTIMATED)				TYPE		M=N.MI K=KM.	PT.	FR. VERT	LAP S. S
L 2	1	46	4.46N 21.29E	59 ***	154429	11-19-66	LUNAR ORB HI.	610MM B6W	- NONE	49K	80328	287 1.0 13	- . R
			CAM.NAD.= 4.45N 21.32E	SWING= 96.	PHASE= 76.	EMIS.ANG.= 1.			CAM.RAD.= 1788.2 KM.		SUN AZM= 91.4		
			SOUTHERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN										
L 2	2	46	4.46N 21.30E	59 ***	154429	11-19-66	LUNAR ORB LO.F=80MM B6W		- NONE	49K	612500	293 1.0 13	- . R
			CAM.NAD.= 4.45N 21.33E	SWING= 102.	PHASE= 76.	EMIS.ANG.= 1.			CAM.RAD.= 1788.2 KM.		SUN AZM= 91.4		
			SOUTHERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN										
L 2	3	47	4.43N 21.42E	59 ***	154431	11-19-66	LUNAR ORB HI.	610MM B6W	- NONE	49K	80328	288 .9 13	- . R
			CAM.NAD.= 4.43N 21.45E	SWING= 97.	PHASE= 76.	EMIS.ANG.= 1.			CAM.RAD.= 1788.2 KM.		SUN AZM= 91.4		
			SOUTHERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN										
L 2	2	47	4.43N 21.43E	59 ***	154431	11-19-66	LUNAR ORB LO.F=80MM B6W		- NONE	49K	612500	295 .9 13	- . R
			CAM.NAD.= 4.42N 21.46E	SWING= 104.	PHASE= 76.	EMIS.ANG.= 1.			CAM.RAD.= 1788.2 KM.		SUN AZM= 91.4		
			SOUTHERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN										
L 2	1	48	4.41N 21.56E	59 ***	154433	11-19-66	LUNAR ORB HI.	610MM B6W	- NONE	49K	80328	289 .8 13	- . R
			CAM.NAD.= 4.40N 21.58E	SWING= 98.	PHASE= 76.	EMIS.ANG.= 1.			CAM.RAD.= 1788.2 KM.		SUN AZM= 91.4		
			SOUTHERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN										
L 2	2	48	4.41N 21.57E	59 ***	154433	11-19-66	LUNAR ORB LO.F=80MM B6W		- NONE	49K	612500	298 .8 14	- . R
			CAM.NAD.= 4.40N 21.59E	SWING= 107.	PHASE= 76.	EMIS.ANG.= 1.			CAM.RAD.= 1788.2 KM.		SUN AZM= 91.4		
			SOUTHERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN										
L 2	1	49	4.38N 21.69E	59 ***	154435	11-19-66	LUNAR ORB HI.	610MM B6W	- NONE	49K	80328	290 .6 14	- . R
			CAM.NAD.= 4.37N 21.70E	SWING= 99.	PHASE= 76.	EMIS.ANG.= 1.			CAM.RAD.= 1788.2 KM.		SUN AZM= 91.4		
			SOUTHERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN										
L 2	2	49	4.38N 21.70E	59 ***	154435	11-19-66	LUNAR ORB LO.F=80MM B6W		- NONE	49K	612500	301 .6 14	- . R
			CAM.NAD.= 4.37N 21.71E	SWING= 110.	PHASE= 76.	EMIS.ANG.= 1.			CAM.RAD.= 1788.2 KM.		SUN AZM= 91.4		
			SOUTHERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN										
L 2	1	50	4.35N 21.82E	59 ***	154437	11-19-66	LUNAR ORB HI.	610MM B6W	- NONE	49K	80328	293 .5 14	- . R
			CAM.NAD.= 4.35N 21.83E	SWING= 102.	PHASE= 76.	EMIS.ANG.= 1.			CAM.RAD.= 1788.2 KM.		SUN AZM= 91.4		
			SOUTHERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN										
L 2	2	50	4.36N 21.83E	59 ***	154437	11-19-66	LUNAR ORB LO.F=80MM B6W		- NONE	49K	612500	307 .5 14	- . R
			CAM.NAD.= 4.35N 21.84E	SWING= 116.	PHASE= 76.	EMIS.ANG.= 1.			CAM.RAD.= 1788.2 KM.		SUN AZM= 91.4		
			SOUTHERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN										
L 2	1	51	4.19N 20.72E	60 ***	191325	11-19-66	LUNAR ORB HI.	610MM B6W	- NONE	48K	78689	297 .9 14	- . R
			CAM.NAD.= 4.18N 20.75E	SWING= 106.	PHASE= 75.	EMIS.ANG.= 1.			CAM.RAD.= 1787.2 KM.		SUN AZM= 91.4		
			SOUTHERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN										
L 2	2	51	4.20N 20.73E	60 ***	191325	11-19-66	LUNAR ORB LO.F=80MM B6W		- NONE	48K	600000	305 .9 14	- . R
			CAM.NAD.= 4.18N 20.75E	SWING= 114.	PHASE= 75.	EMIS.ANG.= 1.			CAM.RAD.= 1787.2 KM.		SUN AZM= 91.4		
			SOUTHERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN										

HIS SION	MAG NULL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. N	ORB M	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.MI K=KM.	SCALE AT PRIN. PT.		TILT AZ ANG. VERT		SUN SIDE ANG. FWD. LAP ANG. 8. R
													PT.	FR.	VERT	8. R	
L 2	1	52	4.17N	20.85E	60	...	191327	11-19-66	LUNAR ORB HI.	610MM B&W	- NONE	48K	786A9	300	08 15	- .9	
CAM. RAD. = 1787.2 KM. SUN AZM = 91.4																	
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 2	2	52	4.17N	20.86E	60	...	191327	11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	48K	600000	308	08 15	- .88		
CAM. RAD. = 1787.2 KM. SUN AZM = 91.4																	
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 2	1	53	4.14N	20.98E	60	...	191329	11-19-66	LUNAR ORB HI.	610MM B&W	- NONE	48K	786A9	303	07 15	- .9	
CAM. RAD. = 1787.2 KM. SUN AZM = 91.4																	
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 2	2	53	4.14N	20.99E	60	...	191329	11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	48K	600000	313	07 15	- .88		
CAM. RAD. = 1787.2 KM. SUN AZM = 91.4																	
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 2	1	54	4.12N	21.11E	60	...	191331	11-19-66	LUNAR ORB HI.	610MM B&W	- NONE	48K	786A9	308	06 15	- .9	
CAM. RAD. = 1787.2 KM. SUN AZM = 91.4																	
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 2	2	54	4.12N	21.11E	60	...	191331	11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	48K	600000	320	06 15	- .88		
CAM. RAD. = 1787.2 KM. SUN AZM = 91.4																	
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 2	1	55	4.09N	21.23E	60	...	191333	11-19-66	LUNAR ORB HI.	610MM B&W	- NONE	48K	786A9	316	04 15	- .9	
CAM. RAD. = 1787.2 KM. SUN AZM = 91.4																	
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 2	2	55	4.09N	21.24E	60	...	191333	11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	48K	600000	329	05 15	- .88		
CAM. RAD. = 1787.2 KM. SUN AZM = 91.4																	
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 2	1	56	4.07N	21.32E	60	...	191335	11-19-66	LUNAR ORB HI.	610MM B&W	- NONE	47K	77049	327	04 15	- .9	
CAM. RAD. = 1786.2 KM. SUN AZM = 91.4																	
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 2	2	56	4.07N	21.37E	60	...	191335	11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	342	04 15	- .88		
CAM. RAD. = 1786.2 KM. SUN AZM = 91.4																	
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 2	1	57	4.04N	21.49E	60	...	191337	11-19-66	LUNAR ORB HI.	610MM B&W	- NONE	47K	77049	347	03 15	- .9	
CAM. RAD. = 1786.2 KM. SUN AZM = 91.4																	
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 2	2	57	4.04N	21.50E	60	...	191337	11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	359	04 15	- .88		
CAM. RAD. = 1786.2 KM. SUN AZM = 91.4																	
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	

MIS SION #	MAG ROLL #	FR,PHOTO OR MAIN	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES-HR M SEC (ESTIMATED)	GMT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT		T I L T		SUN SIDE,	
										TUDE M=N,M1 K=KM.	PRIN. PT.	AZ	ANG. FR. VERT	ANG. FAD. LAP	ANG. FAD. LAP
L 2	1	58	4.01N	21.62E	60 ***	191339	11-19-66	LUNAR ORB HI, 610MM B&W	- NONE	47K	77049	14	03 15	-0.7	
		CAM.HAD.=	4.01N	21.62E		SWING= 183.	PHASE= 75.	EMIS.ANG.= 0.	CAM.RAD.=	1786.2 KM.		SUN	AZM= 91.4		
				SOUTHERN PART OF		LAC 60 J.CAESAR,SABINE,JANSEN									
L 2	2	58	4.02N	21.63E	60 ***	191339	11-19-66	LUNAR ORB LO,F=80MM B&W	- NONE	47K	587500	18	04 15	-0.8	
		CAM.HAD.=	4.01N	21.63E		SWING= 187.	PHASE= 75.	EMIS.ANG.= 0.	CAM.RAD.=	1786.2 KM.		SUN	AZM= 91.4		
				SOUTHERN PART OF		LAC 60 J.CAESAR,SABINE,JANSEN									
L 2	1	59	4.90N	15.22E	61 ***	224059	11-19-66	LUNAR ORB HI, 610MM B&W	- NONE	51K	83607	287	1.5 11	-0.0	
		CAM.HAD.=	4.89N	15.26E		SWING= 97.	PHASE= 78.	EMIS.ANG.= 1.	CAM.RAD.=	1790.2 KM.		SUN	AZM= 91.2		
				S. N. PART OF		LAC 60 J.CAESAR,SABINE,JANSEN									
L 2	2	59	4.90N	15.23E	61 ***	224059	11-19-66	LUNAR ORB LO,F=80MM B&W	- NONE	51K	637500	292	1.4 11	-0.0	
		CAM.HAD.=	4.88N	15.27E		SWING= 101.	PHASE= 78.	EMIS.ANG.= 1.	CAM.RAD.=	1790.2 KM.		SUN	AZM= 91.2		
				S. N. PART OF		LAC 60 J.CAESAR,SABINE,JANSEN									
L 2	1	60	4.87N	15.36E	61 ***	224102	11-19-66	LUNAR ORB HI, 610MM B&W	- NONE	51K	83607	288	1.3 11	-0.9	
		CAM.HAD.=	4.86N	15.40E		SWING= 97.	PHASE= 78.	EMIS.ANG.= 1.	CAM.RAD.=	1790.2 KM.		SUN	AZM= 91.2		
				S. N. PART OF		LAC 60 J.CAESAR,SABINE,JANSEN									
L 2	2	60	4.87N	15.37E	61 ***	224102	11-19-66	LUNAR ORB LO,F=80MM B&W	- NONE	51K	637500	293	1.3 11	-0.88	
		CAM.HAD.=	4.86N	15.40E		SWING= 103.	PHASE= 78.	EMIS.ANG.= 1.	CAM.RAD.=	1790.2 KM.		SUN	AZM= 91.2		
				S. N. PART OF		LAC 60 J.CAESAR,SABINE,JANSEN									
L 2	1	61	4.85N	15.49E	61 ***	224104	11-19-66	LUNAR ORB HI, 610MM B&W	- NONE	51K	83607	289	1.2 11	-1.10	
		CAM.HAD.=	4.83N	15.53E		SWING= 98.	PHASE= 78.	EMIS.ANG.= 1.	CAM.RAD.=	1790.2 KM.		SUN	AZM= 91.2		
				S. N. PART OF		LAC 60 J.CAESAR,SABINE,JANSEN									
L 2	2	61	4.85N	15.50E	61 ***	224104	11-19-66	LUNAR ORB LO,F=80MM B&W	- NONE	51K	637500	295	1.2 11	-0.88	
		CAM.HAD.=	4.83N	15.53E		SWING= 104.	PHASE= 78.	EMIS.ANG.= 1.	CAM.RAD.=	1790.2 KM.		SUN	AZM= 91.2		
				S. N. PART OF		LAC 60 J.CAESAR,SABINE,JANSEN									
L 2	1	62	4.82N	15.63E	61 ***	224106	11-19-66	LUNAR ORB HI, 610MM B&W	- NONE	51K	83607	290	1.1 11	-1.10	
		CAM.HAD.=	4.81N	15.66E		SWING= 99.	PHASE= 78.	EMIS.ANG.= 1.	CAM.RAD.=	1790.2 KM.		SUN	AZM= 91.3		



SUN	ROLL	FR. OR MAIN	PHOTO LAT.	PRIN. LONG.	PT. N	ORB	GET TIMES-HR	GMT H SEC	M-DA-YR	CAMERA-LENS OR SENSUR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE		T I L T		SUN SIDF. FWD. LAP
												H=N.M1 K=KM.	PRIN. PT.	AZ	ANG. FR. VERT	
L 2	1	64	4.77N	15.89E	61	***	224110	11-19-66	LUNAR ORB HI. 610MM B&W	- NONE	50K	81967	293	.8	11	-.10
CAM.NAD.= 4.76N 15.91E SWING= 102. PHASE= 78. EMIS.ANG.= 1. S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 2	2	64	4.77N	15.90E	61	***	224110	11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	302	.8	11	-.88
CAM.NAD.= 4.76N 15.92E SWING= 111. PHASE= 78. EMIS.ANG.= 1. S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 2	1	65	4.74N	16.03E	61	***	224112	11-19-66	LUNAR ORB HI. 610MM B&W	- NONE	50K	81967	296	.7	11	-.9
CAM.NAD.= 4.73N 16.04E SWING= 105. PHASE= 78. EMIS.ANG.= 1. S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 2	2	65	4.74N	16.04E	61	***	224112	11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	306	.7	11	-.88
CAM.NAD.= 4.73N 16.05E SWING= 115. PHASE= 78. EMIS.ANG.= 1. S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 2	1	66	4.72N	16.16E	61	***	224114	11-19-66	LUNAR ORB HI. 610MM B&W	- NONE	50K	81967	299	.5	12	-.10
CAM.NAD.= 4.71N 16.17E SWING= 108. PHASE= 78. EMIS.ANG.= 1. S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 2	2	66	4.72N	16.17E	61	***	224114	11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	312	.6	12	-.88
CAM.NAD.= 4.71N 16.18E SWING= 121. PHASE= 78. EMIS.ANG.= 1. S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 2	1	67	2.75N	24.38E	62	***	021236	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	16	3.4	22	-.00
CAM.NAD.= 2.66N 24.35E SWING= 185. PHASE= 69. EMIS.ANG.= 3. S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 2	2	67	2.75N	24.39E	62	***	021236	11-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	17	3.5	22	-.00
CAM.NAD.= 2.66N 24.36E SWING= 185. PHASE= 69. EMIS.ANG.= 4. S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 2	1	68	2.72N	24.50E	62	***	021238	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	18	3.4	22	-.8
CAM.NAD.= 2.64N 24.47E SWING= 187. PHASE= 69. EMIS.ANG.= 3. S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 2	2	68	2.72N	24.51E	62	***	021238	11-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	19	3.5	22	-.87
CAM.NAD.= 2.63N 24.48E SWING= 187. PHASE= 69. EMIS.ANG.= 4. S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 2	1	69	2.70N	24.62E	62	***	021240	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	20	3.4	22	-.8
CAM.NAD.= 2.61N 24.69E SWING= 189. PHASE= 69. EMIS.ANG.= 3. S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 2	2	69	2.70N	24.63E	62	***	021240	11-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	21	3.6	22	-.87
CAM.NAD.= 2.61N 24.60E SWING= 189. PHASE= 69. EMIS.ANG.= 4. S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																

HIS	MAG	FR,PHOTO	PRIN.PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE,		
SION	ROLL	UR	LAT.		TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	A7	ANG. ANG.	FWD.
#	#	MAIN	LONG.		(ESTIMATED)			TYPE		M=N,M1	PT.		FR.	LAP
		#								K=KM.			VERT	X, Y
L 2	1	70	2.67N	24.75E	62 ***	021242	11-20-66	LUNAR ORB HI, 610MM B&W	- NONE	46K	75410	22	3.5 22	- . 8
			2.59N	24.71E	SWING= 191.			PHASE= 69. EMIS-ANG.= 4.	CAM-RAD.=	1785.2 KM.		SUN	AZM= 91.4	
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN						
L 2	2	70	2.67N	24.75E	62 ***	021242	11-20-66	LUNAR ORB LO,F=80MM B&W	- NONE	46K	575000	23	3.6 22	- . 87
			2.59N	24.72E	SWING= 191.			PHASE= 69. EMIS-ANG.= 4.	CAM-RAD.=	1785.2 KM.		SUN	AZM= 91.4	
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN						
L 2	1	71	2.65N	24.87E	62 ***	021244	11-20-66	LUNAR ORB HI, 610MM B&W	- NONE	46K	75410	24	3.5 22	- . 8
			2.56N	24.83E	SWING= 193.			PHASE= 69. EMIS-ANG.= 4.	CAM-RAD.=	1785.2 KM.		SUN	AZM= 91.4	
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN						
L 2	2	71	2.65N	24.88E	62 ***	021244	11-20-66	LUNAR ORB LO,F=80MM B&W	- NONE	46K	575000	24	3.6 22	- . 87
			2.56N	24.84E	SWING= 193.			PHASE= 69. EMIS-ANG.= 4.	CAM-RAD.=	1785.2 KM.		SUN	AZM= 91.4	
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN						
L 2	1	72	2.62N	24.99E	62 ***	021245	11-20-66	LUNAR ORB HI, 610MM B&W	- NONE	46K	75410	26	3.1 22	- . 8
			2.54N	24.95E	SWING= 195.			PHASE= 69. EMIS-ANG.= 4.	CAM-RAD.=	1785.2 KM.		SUN	AZM= 91.4	
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN						
L 2	2	72	2.62N	25.00E	62 ***	021246	11-20-66	LUNAR ORB LO,F=80MM B&W	- NONE	46K	575000	26	3.6 22	- . 87
			2.54N	24.96E	SWING= 195.			PHASE= 69. EMIS-ANG.= 4.	CAM-RAD.=	1785.2 KM.		SUN	AZM= 91.4	
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN						
L 2	1	73	2.61N	25.11E	62 ***	021247	11-20-66	LUNAR ORB HI, 610MM B&W	- NONE	46K	75410	28	3.6 22	- . 8
			2.51N	25.07E	SWING= 197.			PHASE= 69. EMIS-ANG.= 4.	CAM-RAD.=	1785.2 KM.		SUN	AZM= 91.4	
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN						
L 2	2	73	2.61N	25.12E	62 ***	021248	11-20-66	LUNAR ORB LO,F=80MM B&W	- NONE	46K	575000	28	3.7 22	- . 87
			2.51N	25.08E	SWING= 197.			PHASE= 69. EMIS-ANG.= 4.	CAM-RAD.=	1785.2 KM.		SUN	AZM= 91.4	
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN						
L 2	1	74	2.57N	25.24E	62 ***	021249	11-20-66	LUNAR ORB HI, 610MM B&W	- NONE	46K	75410	30	3.6 23	- . 8
			2.49N	25.19E	SWING= 198.			PHASE= 69. EMIS-ANG.= 4.	CAM-RAD.=	1785.2 KM.		SUN	AZM= 91.4	
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN						
L 2	2	74	2.57N	25.25E	62 ***	021250	11-20-66	LUNAR ORB LO,F=80MM B&W	- NONE	46K	575000	30	3.7 23	- . 87
			2.49N	25.20E	SWING= 198.			PHASE= 69. EMIS-ANG.= 4.	CAM-RAD.=	1785.2 KM.		SUN	AZM= 91.4	
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN						
L 2	1	76	1.19N	23.74E	66 ***	160847	11-20-66	LUNAR ORB HI, 610MM B&W	- NONE	49K	80328	104	1.9 28	- . 88
			1.20N	23.71E	SWING= 272.			PHASE= 63. EMIS-ANG.= 1.	CAM-RAD.=	1788.2 KM.		SUN	AZM= 91.0	
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN						
L 2	2	76	1.20N	23.75E	66 ***	160848	11-20-66	LUNAR ORB LO,F=80MM B&W	- NONE	49K	612500	97	1.9 28	- . 88
			1.20N	23.72E	SWING= 265.			PHASE= 63. EMIS-ANG.= 1.	CAM-RAD.=	1788.2 KM.		SUN	AZM= 91.0	
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN						

MIS SION	MAG ROLL	FR, PHOTO OR MAIN	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR M SEC (ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.HI K=KM.	SCALE AT PRIN. PT.	T AZ	L ANG.	T FR. VERT	SUN SIDE. ANG. FWD.
L 2	1	77	1.17N	23.87E	66 ***	160649	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	104	1.0 28	- .10	
			CAM. RAD. = 1.17N	23.84E	SWING = 272.			PHASE = 63. EMIS. ANG. = 1.	CAM. RAD. = 1788.2 KM.			SUN AZM = 91.0			
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN							
L 2	2	77	1.17N	23.87E	66 ***	160850	11-20-66	LUNAR ORB LO. F=80MM B&W	- NONE	49K	612500	97	1.0 28	- .88	
			CAM. RAD. = 1.17N	23.84E	SWING = 266.			PHASE = 63. EMIS. ANG. = 1.	CAM. RAD. = 1788.2 KM.			SUN AZM = 91.0			
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN							
L 2	1	78	1.14N	24.00E	66 ***	160852	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	104	1.1 28	- .9	
			CAM. RAD. = 1.15N	23.96E	SWING = 272.			PHASE = 63. EMIS. ANG. = 1.	CAM. RAD. = 1788.2 KM.			SUN AZM = 91.0			
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN							
L 2	2	78	1.14N	24.00E	66 ***	160852	11-20-66	LUNAR ORB LO. F=80MM B&W	- NONE	49K	612500	98	1.2 28	- .87	
			CAM. RAD. = 1.15N	23.97E	SWING = 266.			PHASE = 63. EMIS. ANG. = 1.	CAM. RAD. = 1788.2 KM.			SUN AZM = 91.0			
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN							
L 2	1	79	1.11N	24.13E	66 ***	160854	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	50K	81947	103	1.3 28	- .9	
			CAM. RAD. = 1.12N	24.09E	SWING = 272.			PHASE = 63. EMIS. ANG. = 1.	CAM. RAD. = 1789.2 KM.			SUN AZM = 91.0			
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN							
L 2	2	79	1.11N	24.14E	66 ***	160854	11-20-66	LUNAR ORB LO. F=80MM B&W	- NONE	50K	625000	98	1.3 28	- .87	
			CAM. RAD. = 1.12N	24.10E	SWING = 266.			PHASE = 63. EMIS. ANG. = 1.	CAM. RAD. = 1789.2 KM.			SUN AZM = 91.0			
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN							
L 2	1	80	1.08N	24.26E	66 ***	160856	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	50K	81947	103	1.4 29	- .8	
			CAM. RAD. = 1.09N	24.22E	SWING = 271.			PHASE = 63. EMIS. ANG. = 1.	CAM. RAD. = 1789.2 KM.			SUN AZM = 91.0			
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN							
L 2	2	80	1.08N	24.27E	66 ***	160856	11-20-66	LUNAR ORB LO. F=80MM B&W	- NONE	50K	625000	99	1.4 29	- .87	
			CAM. RAD. = 1.09N	24.23E	SWING = 267.			PHASE = 63. EMIS. ANG. = 1.	CAM. RAD. = 1789.2 KM.			SUN AZM = 91.0			
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN							
L 2	1	81	1.06N	24.39E	66 ***	160858	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	50K	81947	103	1.5 29	- .7	
			CAM. RAD. = 1.07N	24.35E	SWING = 271.			PHASE = 63. EMIS. ANG. = 2.	CAM. RAD. = 1789.2 KM.			SUN AZM = 90.9			
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN							
L 2	2	81	1.06N	24.40E	66 ***	160858	11-20-66	LUNAR ORB LO. F=80MM B&W	- NONE	50K	625000	99	1.6 29	- .87	
			CAM. RAD. = 1.06N	24.36E	SWING = 267.			PHASE = 63. EMIS. ANG. = 2.	CAM. RAD. = 1789.2 KM.			SUN AZM = 90.9			
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN							
L 2	1	82	1.03N	24.53E	66 ***	160900	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	50K	81947	103	1.7 29	- .7	
			CAM. RAD. = 1.04N	24.48E	SWING = 271.			PHASE = 63. EMIS. ANG. = 2.	CAM. RAD. = 1789.2 KM.			SUN AZM = 90.9			
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN							
L 2	2	82	1.03N	24.54E	66 ***	160900	11-20-66	LUNAR ORB LO. F=80MM B&W	- NONE	50K	625000	99	1.7 29	- .87	
			CAM. RAD. = 1.04N	24.49E	SWING = 267.			PHASE = 63. EMIS. ANG. = 2.	CAM. RAD. = 1789.2 KM.			SUN AZM = 90.9			
					S. E. PART OF			LAC 60 J. CAESAR, SABINE, JANSEN							

SUN	MAG	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR	GHI M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M-N-MI K-KM.	SCALE PRIN. PT.	AT AZ	L I ANG. FR. VERT	SUN SIDE, ANG. LAP	FWD. S. 8
L 2	1	83	1.00N 24.66E	66 ***	160902	11-20-66	LUNAR ORB HI. 410MM B&W	- NONE	50K	81967	103	1.8 29	- .6		
CAM-NAD.= 1.01N 24.61E SWING= 271. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1789.2 KM. SUN AZM= 90.9 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN															
L 2	2	83	1.00N 24.68E	66 ***	160903	11-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	99	1.8 29	- .87		
CAM-NAD.= 1.01N 24.62E SWING= 267. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1789.2 KM. SUN AZM= 90.9 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN															
L 2	1	84	0.82N 23.61E	67 ***	193751	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	51K	83607	95	1.1 30	- .**		
CAM-NAD.= .82N 23.58E SWING= 263. PHASE= 61. EMIS-ANG.= 1. CAM-RAD.= 1790.2 KM. SUN AZM= 90.8 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN															
L 2	2	84	0.82N 23.62E	67 ***	193751	11-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	89	1.1 30	- .**		
CAM-NAD.= .82N 23.59E SWING= 258. PHASE= 61. EMIS-ANG.= 1. CAM-RAD.= 1790.2 KM. SUN AZM= 90.8 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN															
L 2	1	85	0.79N 23.75E	67 ***	193753	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	51K	83607	96	1.2 30	- .9		
CAM-NAD.= .80N 23.71E SWING= 264. PHASE= 61. EMIS-ANG.= 1. CAM-RAD.= 1790.2 KM. SUN AZM= 90.8 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN															
L 2	2	85	0.79N 23.76E	67 ***	193753	11-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	91	1.3 30	- .87		
CAM-NAD.= .79N 23.72E SWING= 259. PHASE= 61. EMIS-ANG.= 1. CAM-RAD.= 1790.2 KM. SUN AZM= 90.8 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN															
L 2	1	86	0.76N 23.89E	67 ***	193755	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	96	1.3 30	- .9		
CAM-NAD.= .77N 23.85E SWING= 265. PHASE= 61. EMIS-ANG.= 1. CAM-RAD.= 1791.2 KM. SUN AZM= 90.8 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN															
L 2	2	86	0.76N 23.90E	67 ***	193756	11-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	92	1.4 30	- .87		
CAM-NAD.= .77N 23.85E SWING= 260. PHASE= 61. EMIS-ANG.= 1. CAM-RAD.= 1791.2 KM. SUN AZM= 90.8 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN															
L 2	1	87	0.73N 24.02E	67 ***	193758	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	97	1.5 30	- .9		
CAM-NAD.= .74N 23.98E SWING= 265. PHASE= 61. EMIS-ANG.= 1. CAM-RAD.= 1791.2 KM. SUN AZM= 90.8 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN															
L 2	2	87	0.74N 24.03E	67 ***	193758	11-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	93	1.5 30	- .87		
CAM-NAD.= .74N 23.99E SWING= 261. PHASE= 61. EMIS-ANG.= 2. CAM-RAD.= 1791.2 KM. SUN AZM= 90.8 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN															
L 2	1	88	0.70N 24.16E	67 ***	193800	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	97	1.6 30	- .8		
CAM-NAD.= .71N 24.11E SWING= 265. PHASE= 61. EMIS-ANG.= 2. CAM-RAD.= 1791.2 KM. SUN AZM= 90.8 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN															
L 2	2	88	0.71N 24.17E	67 ***	193800	11-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	93	1.7 30	- .87		
CAM-NAD.= .71N 24.12E SWING= 262. PHASE= 61. EMIS-ANG.= 2. CAM-RAD.= 1791.2 KM. SUN AZM= 90.8 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN															

6 N. E. PART OF LAC 7A THOPHILUS, KANT

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT.	UNB LONG.	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE	SCALE AT PRIN. PT.	T I L T AZ	SUN ANG.	SIDE, ANG. FR. VERT	FWD. LAP R. R
L 2	1	89	0.68N	24.30E	67	000	193802 11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	98	1.8 30	- .8	
		CAM. NAD. =	.68N	24.29E	SWING = 266.		PHASE = 61.	EMIS. ANG. = 2.	CAM. RAD. =	1791.2 KM.	SUN AZM = 90.8				
		S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 2	2	89	0.68N	24.31E	67	000	193802 11-20-66	LUNAR ORB LO. F=80MM B&W	- NONE	52K	650000	94	1.8 30	- .87	
		CAM. NAD. =	.68N	24.26E	SWING = 262.		PHASE = 61.	EMIS. ANG. = 2.	CAM. RAD. =	1791.2 KM.	SUN AZM = 90.8				
		S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 2	1	90	0.65N	24.44E	67	000	193804 11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	98	1.9 31	- .7	
		CAM. NAD. =	.65N	24.39E	SWING = 266.		PHASE = 61.	EMIS. ANG. = 2.	CAM. RAD. =	1791.2 KM.	SUN AZM = 90.8				
		S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 2	2	90	0.65N	24.45E	67	000	193805 11-20-66	LUNAR ORB LO. F=80MM B&W	- NONE	52K	650000	95	1.9 31	- .87	
		CAM. NAD. =	.65N	24.39E	SWING = 263.		PHASE = 61.	EMIS. ANG. = 2.	CAM. RAD. =	1791.2 KM.	SUN AZM = 90.8				
		S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 2	1	91	0.62N	24.58E	67	000	193807 11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	53K	86845	98	2.0 31	- .7	
		CAM. NAD. =	.62N	24.52E	SWING = 266.		PHASE = 61.	EMIS. ANG. = 2.	CAM. RAD. =	1792.2 KM.	SUN AZM = 90.7				
		S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 2	2	91	0.62N	24.59E	67	000	193807 11-20-66	LUNAR ORB LO. F=80MM B&W	- NONE	53K	662500	95	2.1 31	- .87	
		CAM. NAD. =	.62N	24.53E	SWING = 263.		PHASE = 61.	EMIS. ANG. = 2.	CAM. RAD. =	1792.2 KM.	SUN AZM = 90.7				
		S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 2	1	94	0.58N	12.81E	73	000	162925 11-21-66	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	108	1.4 30	- .00	
		CAM. NAD. =	.60N	12.77E	SWING = 276.		PHASE = 62.	EMIS. ANG. = 1.	CAM. RAD. =	1788.2 KM.	SUN AZM = 90.7				
		S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 2	2	94	0.58N	12.82E	73	000	162925 11-21-66	LUNAR ORB LO. F=80MM B&W	- NONE	49K	612500	104	1.4 30	- .00	
		CAM. NAD. =	.59N	12.78E	SWING = 272.		PHASE = 62.	EMIS. ANG. = 1.	CAM. RAD. =	1788.2 KM.	SUN AZM = 90.7				
		S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 3	1	40	3.57N	19.49E	50	000	065104 2-16-67	LUNAR ORB HI. 610MM B&W	- NONE	60K	98361	206	17.1 9	- .00	
		CAM. NAD. =	4.12N	19.77E	SWING = 7.		PHASE = 74.	EMIS. ANG. = 18.	CAM. RAD. =	1799.2 KM.	SUN AZM = 92.1				
		SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 3	1	42	3.12N	20.73E	50	000	065125 2-16-67	LUNAR ORB HI. 610MM B&W	- NONE	58K	95082	202	17.0 10	- .00	
		CAM. NAD. =	3.67N	20.96E	SWING = 3.		PHASE = 74.	EMIS. ANG. = 18.	CAM. RAD. =	1797.2 KM.	SUN AZM = 92.1				
		SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 3	1	44	0.69N	27.10E	51	000	102218 2-16-67	LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	18	3.7 19	- .00	
		CAM. NAD. =	.59N	27.06E	SWING = 177.		PHASE = 72.	EMIS. ANG. = 4.	CAM. RAD. =	1791.2 KM.	SUN AZM = 91.8				
		S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 3	1	46	0.59N	27.35E	51	000	102222 2-16-67	LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	72	3.7 19	- .10	
		CAM. NAD. =	.49N	27.31E	SWING = 181.		PHASE = 72.	EMIS. ANG. = 4.	CAM. RAD. =	1791.2 KM.	SUN AZM = 91.8				
		S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													

HIS SION	MAG ROL.	FR, PHOTO OR	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE	SCALE PRIN. PT.	T I L T AZ	SUN SIDE, ANG. FR. VERT	SIDE, ANG. FR. VERT	FWD. LAP R. R
L 3	1	47	U.54N	27.48E	51	000	102225	2-16-67 LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	24	3.7 19	-10	
CAM. RAD. =		.44N	27.44E	SWING = 183.	PHASE = 72.	EMIS. ANG. = 4.	S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN		CAM. RAD. =		1791.2 KM.	SUN AZH = 91.8			
L 3	1	48	U.49N	27.61E	51	000	102227	2-16-67 LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	24	3.7 19	-10	
CAM. RAD. =		.39N	27.56E	SWING = 185.	PHASE = 72.	EMIS. ANG. = 4.	S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN		CAM. RAD. =		1791.2 KM.	SUN AZH = 91.7			
L 3	1	52	U.46N	24.23E	52	000	135037	2-16-67 LUNAR ORB HI. 610MM B&W	- NONE	51K	83607	201	14.1 18	-00	
CAM. RAD. =		.85N	24.39E	SWING = 1.	PHASE = 68.	EMIS. ANG. = 14.	S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN		CAM. RAD. =		1790.2 KM.	SUN AZH = 91.7			
L 3	1	54	U.36N	24.49E	52	000	135042	2-16-67 LUNAR ORB HI. 610MM B&W	- NONE	51K	83607	200	14.1 18	-0.7	
CAM. RAD. =		.76N	24.64E	SWING = 0.	PHASE = 68.	EMIS. ANG. = 14.	S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN		CAM. RAD. =		1790.2 KM.	SUN AZH = 91.7			
L 3	2	58	U.16N	25.02E	52	000	135051	2-16-67 LUNAR ORB LO. F=80MM B&W	- NONE	51K	637500	198	14.0 18	-0.87	
CAM. RAD. =		.56N	25.16E	SWING = 358.	PHASE = 68.	EMIS. ANG. = 14.	S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 78 THEOPHILUS, KANT		CAM. RAD. =		1790.2 KM.	SUN AZH = 91.6			
L 3	1	60	U.51N	24.21E	53	000	171938	2-16-67 LUNAR ORB HI. 610MM B&W	- NONE	50K	81967	19	11.0 19	-00	
CAM. RAD. =		.20N	24.10E	SWING = 178.	PHASE = 74.	EMIS. ANG. = 11.	S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN		CAM. RAD. =		1789.2 KM.	SUN AZH = 91.8			
L 3	2	60	U.51N	24.22E	53	000	171938	2-16-67 LUNAR ORB LO. F=80MM B&W	- NONE	50K	625000	19	11.1 19	-00	
CAM. RAD. =		.20N	24.11E	SWING = 178.	PHASE = 74.	EMIS. ANG. = 11.	S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 78 THEOPHILUS, KANT		CAM. RAD. =		1789.2 KM.	SUN AZH = 91.8			
L 3	1	62	U.41N	24.47E	53	000	171942	2-16-67 LUNAR ORB HI. 610MM B&W	- NONE	50K	81967	20	11.0 20	-0.5	
CAM. RAD. =		.10N	24.36E	SWING = 180.	PHASE = 74.	EMIS. ANG. = 11.	S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN		CAM. RAD. =		1789.2 KM.	SUN AZH = 91.7			
L 3	2	63	U.30N	24.60E	53	000	171945	2-16-67 LUNAR ORB LO. F=80MM B&W	- NONE	50K	625000	21	11.0 20	-0.88	
CAM. RAD. =		.06N	24.48E	SWING = 180.	PHASE = 74.	EMIS. ANG. = 11.	S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 78 THEOPHILUS, KANT		CAM. RAD. =		1789.2 KM.	SUN AZH = 91.7			
L 3	1	65	U.26N	24.86E	53	000	171949	2-16-67 LUNAR ORB HI. 610MM B&W	- NONE	50K	81967	22	11.0 20	-0.9	
CAM. RAD. =		.04S	24.73E	SWING = 182.	PHASE = 74.	EMIS. ANG. = 11.	S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN		CAM. RAD. =		1789.2 KM.	SUN AZH = 91.7			
L 3	2	66	U.21N	25.00E	53	000	171951	2-16-67 LUNAR ORB LO. F=80MM B&W	- NONE	50K	625000	23	11.1 20	-0.88	
CAM. RAD. =		.04S	24.87E	SWING = 182.	PHASE = 74.	EMIS. ANG. = 11.	S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 78 THEOPHILUS, KANT		CAM. RAD. =		1789.2 KM.	SUN AZH = 91.7			
L 3	1	67	U.15N	25.12E	53	000	171953	2-16-67 LUNAR ORB HI. 610MM B&W	- NONE	50K	81967	24	11.0 20	-0.4	
CAM. RAD. =		.14S	24.99E	SWING = 183.	PHASE = 74.	EMIS. ANG. = 11.	S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN		CAM. RAD. =		1789.2 KM.	SUN AZH = 91.6			

HIS SION	HAG ROLL	FR, OR	PHOTO LAT.	PRIN. LONG.	PT. "	ORB "	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT; TUDE	SCALE AT PRIN. PT.	T I L T A2	SUN SIDE, ANG. FR.	SIDE, ANG. VERT	FWD. LAP R. 8
L 3	1	68	0.30N	20.99E	54	...	204751	2-16-67	LUNAR ORB HI.	610MM B&W	- NONE	50K	81967	203	7.3 18	-.00	
CAM-NAD.= .49N 21.08E SWING= 3. PHASE= 70. EMIS-ANG.= 8. CAM-RAD.= 1789.2 KM. SUN AZM= 91.7 SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 3	2	68	0.30N	21.00E	54	...	204751	2-16-67	LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	204	7.2 18	-.00		
CAM-NAD.= .49N 21.08E SWING= 3. PHASE= 69. EMIS-ANG.= 7. CAM-RAD.= 1789.2 KM. SUN AZM= 91.7 SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN & NORTHERN PART OF LAC 78 THEOPHILUS, KANT																	
L 3	1	69	0.10N	21.49E	54	...	204759	2-16-67	LUNAR ORB HI.	610MM B&W	- NONE	49K	80328	199	7.3 18	-.00	
CAM-NAD.= .30N 21.56E SWING= 359. PHASE= 70. EMIS-ANG.= 8. CAM-RAD.= 1788.2 KM. SUN AZM= 91.6 SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 3	1	70	0.10S	22.00E	54	...	204808	2-16-67	LUNAR ORB HI.	610MM B&W	- NONE	49K	80328	195	7.3 19	-.00	
CAM-NAD.= .11N 22.05E SWING= 354. PHASE= 70. EMIS-ANG.= 8. CAM-RAD.= 1788.2 KM. SUN AZM= 91.5 NORTHERN PART OF LAC 78 THEOPHILUS, KANT & SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 3	2	70	0.10S	22.00E	54	...	204608	2-16-67	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	195	7.3 19	-.52		
CAM-NAD.= .10N 22.06E SWING= 355. PHASE= 69. EMIS-ANG.= 8. CAM-RAD.= 1788.2 KM. SUN AZM= 91.5 NORTHERN PART OF LAC 78 THEOPHILUS, KANT & SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 3	2	73	7.59N	6.60E	56	...	034130	2-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	63K	787500	20	52.5 7	-.00		
CAM-NAD.= 4.99N 5.60E SWING= 177. PHASE= 101. EMIS-ANG.= 55. CAM-RAD.= 1802.2 KM. SUN AZM= 92.4 EASTERN PART OF LAC 59 M. VAPORUM, HYGINUS & WESTERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 3	1	75	3.79N	6.77E	57	...	071056	2-17-67	LUNAR ORB	610MM B&W	- NONE	56K	91803	183	53 9	-.00	
CAM-NAD.= 3.80N 6.77E SWING= 343. PHASE= 81. EMIS-ANG.= 0. CAM-RAD.= 1795.2 KM. SUN AZM= 92.1 S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN																	
L 4	1	77	14.93S	30.15E	15	...	050718	5-16-67	LUNAR ORB HI.	610MM B&W	- NONE	2730K	4475410	141	54 23	-.49	
CAM-NAD.= 14.46S 29.77E SWING= 327. PHASE= 68. EMIS-ANG.= 1. CAM-RAD.= 4469.2 KM. SUN AZM= 83.0 LAC 79 COLUMBO, NE ; LAC 78 THEOPHILUS ; LAC 96 ALTAI SCAR ; LAC 97 FRACASTORIUS, S. NECTAR & LAC 60 J. CAESAR, SABINE																	
L 4	1	78	13.30N	30.21E	15	...	053813	5-16-67	LUNAR ORB HI.	610MM B&W	- NONE	2722K	4462295	248	1.0 24	-.40	
CAM-NAD.= 13.86N 31.68E SWING= 63. PHASE= 64. EMIS-ANG.= 3. CAM-RAD.= 4461.2 KM. SUN AZM= 95.4 LAC 61 TAHONTIUS, LYELL ; LAC 60 J. CAESAR, SABINE, JANSEN ; LAC 43 MACROBIUS, PROCLUS & LAC 42 M. SERENITY, D																	
L 4	2	83	42.94S	32.82E	16	...	163652	5-16-67	LUNAR ORB LO.F=80MM B&W	- NONE	2972K	37150000	98	5.1 23	-.00		
CAM-NAD.= 42.23S 20.71E SWING= 297. PHASE= 80. EMIS-ANG.= 14. CAM-RAD.= 4711.2 KM. SUN AZM= 66.3 LAC 113 MAUNULYCUS, RAB. LEVI ; LAC 1/2 MOON SPHERE ; LAC 78 THEOPHILUS ; LAC 116 M. AUSTRALIA ; LAC 140 SCHR. & LAC 60 J. CAE																	
L 4	1	84	15.19S	24.28E	16	...	170857	5-16-67	LUNAR ORB HI.	610MM B&W	- NONE	2727K	4470492	124	5.8 23	-.47	
CAM-NAD.= 14.45S 23.18E SWING= 310. PHASE= 68. EMIS-ANG.= 2. CAM-RAD.= 4466.2 KM. SUN AZM= 82.8 EASTERN PART OF LAC 78 THEOPHILUS ; EASTERN PART OF LAC 96 ALTAI SCAR ; LAC 60 J. CAESAR, SABINE, JANSEN & LAC 97 FRACASTORIUS,																	
L 4	1	85	12.99N	23.94E	16	...	173950	5-16-67	LUNAR ORB HI.	610MM B&W	- NONE	2717K	4454098	230	5.9 24	-.31	
CAM-NAD.= 13.88N 25.04E SWING= 44. PHASE= 65. EMIS-ANG.= 2. CAM-RAD.= 4456.2 KM. SUN AZM= 95.2 EASTERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN ; EASTERN PART OF LAC 42 M. SERENITY, DAWES ; LAC 78 THEOPHILUS & LAC 43 MA																	

L	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE,	SUN SIDE,		
													FR.	ANG.	
SION	ROLL	OR	LAT.		TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	FR.	ANG.
"	"	MAIN	LONG.		(ESTIMATED)			TYPE		M=N, MI	PT.		VERT		
										K=KM.					
L 4	2	853	13.00N	23.94E	16	000	173950	5-16-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2717K	33962500	230	9.24	-.27
		CAM.NAD.=	13.89N	25.04E			SWING= 44.	PHASE= 65. EMIS.ANG.= 2.		CAM.RAD.=	4456.2 KM.		SUN AZH= 95.2		
		DEGRADED NEGATIVE						: LAC 60 J. CAESAR, SABINE, JANSEN					: LAC 78 THEOPHILUS, KANT		: LAC 79 COLOMBUS, NE.M
L 4	2	88	42.69S	24.94E	17	000	043838	5-17-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2973K	37.1500	96	4.6 22	-.00
		CAM.NAD.=	42.26S	14.18E			SWING= 295.	PHASE= 80. EMIS.ANG.= 13.		CAM.RAD.=	4712.2 KM.		SUN AZH= 67.8		
		LAC 113 MAJULYCUS, HAD. LEVI						: >1/2 MOON SPHERE					: LAC 140 SCHRODING		: LAC 129 M. AUSTRA
													: LAC 79 COLON		: LAC 60 J. CAE
L 4	1	89	15.09S	16.90E	17	000	051044	5-17-67 LUNAR ORB HI. 610MM B&W	-	NONE	2724K	44.174	154	5.22	-.48
		CAM.NAD.=	14.45S	16.59E			SWING= 390.	PHASE= 68. EMIS.ANG.= 1.		CAM.RAD.=	4463.2 K		SUN AZH= 83.2		
		WESTERN PART OF LAC 78 THEOPHILUS, KANT						: CENTRAL PART OF LAC 96 ALTAI SCAR					: S. W. PART OF LAC 60 J. CAESAR, SAB		
L 4	1	90	13.75N	15.87E	17	000	054135	5-17-67 LUNAR ORB HI. 610MM B&W	-	NONE	2711K	4444262	246	1.6 22	-.22
		CAM.NAD.=	13.89N	18.40E			SWING= 82.	PHASE= 64. EMIS.ANG.= 4.		CAM.RAD.=	4450.2 KM.		SUN AZH= 95.0		
		WESTERN PART OF LAC 60 J. CAESAR, SABINE, J						: WESTERN PART OF LAC 42 M. SERENITY, DAWES					: N. W. PART OF LAC 78 THEOPHILUS, KANT		
L 4	2	90*	13.75N	15.87E	17	000	054135	5-17-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2711K	33887500	267	1.6 22	-.71
		CAM.NAD.=	13.89N	18.39E			SWING= 82.	PHASE= 64. EMIS.ANG.= 4.		CAM.RAD.=	4450.2 KM.		SUN AZH= 95.0		
		LAC 60 J. CAESAR, SABINE, JANSEN						: >1/2 MOON SPHERE					: LAC 26 EUDOXUS, BU		: LAC 95 PURBACH, ARZACHEL
													: LAC 97 FRACASTORI		
L 4	1	96	15.18S	10.67E	18	000	171241	5-17-67 LUNAR ORB HI. 610MM B&W	-	NONE	2722K	4462295	138	6.22	-.46
		CAM.NAD.=	14.45S	9.99E			SWING= 324.	PHASE= 69. EMIS.ANG.= 2.		CAM.RAD.=	4461.2 KM.		SUN AZH= 83.2		
		LAC 78 THEOPHILUS						: LAC 77 PTULMAEUS					: LAC 95 PURBACH, AR		: LAC 96 ALTAI SCARP, GEBER
													: LAC 59 M. VAPORUM, HYG		
L 4	1	97	12.97N	9.66E	18	000	174328	5-17-67 LUNAR ORB HI. 610MM B&W	-	NONE	2705K	4434426	245	1.4 22	-.17
		CAM.NAD.=	13.90N	11.76E			SWING= 60.	PHASE= 65. EMIS.ANG.= 4.		CAM.RAD.=	4444.2 KM.		SUN AZH= 94.7		
		LAC 59 M. VAPORUM, HYGINUS						: LAC 60 J. CAESAR, SABINE, JANSEN					: LAC 42 M. SERENITY, DAWES		: LAC 41 APENNINES, HA
L 4	2	112	42.57S	1.35W	21	000	044650	5-19-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2986K	37325000	95	4.6 20	-.00
		CAM.NAD.=	42.26S	12.07W			SWING= 294.	PHASE= 81. EMIS.ANG.= 13.		CAM.RAD.=	4725.2 KM.		SUN AZH= 69.2		
		LAC 112 TYCHO, STOFER						: >1/2 MOON SPHERE					: LAC 144 SCOTT, S. POLY NEAR SIDE		: LAC 76 HIPHAEUS MT.
L 4	2	127	41.21N	14.29W	23	000	062610	5-20-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2986K	36075000	114	2.2 27	-.29
		CAM.NAD.=	42.81N	14.79W			SWING= 278.	PHASE= 74. EMIS.ANG.= 6.		CAM.RAD.=	4625.2 KM.		SUN AZH= 109.6		
		LAC 24 SINUS IRID						: >1/2 MOON SPHERE					: LAC 76 HIPHAEUS M		: LAC 1 N. POLE NEAR SIDE BYRD, PEARY
													: >80 N		: LAC 146 N. POLE FARST
L 5	2	52	2.92N	35.56E	28	000	143052	8-11-67 LUNAR ORB LO.F=80MM B&W	-	NONE	101K	1262500	269	51.7 17	-.00
		CAM.NAD.=	2.96N	40.00E			SWING= 177.	PHASE= 17. EMIS.ANG.= 56.		CAM.RAD.=	1840.2 KM.		SUN AZH= 89.4		
		S. E. PART OF LAC 61 TARANTUS, LYLELL						: S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN					: LAC 78 THEOPHILUS		: LAC 79 CO
L 5	1	64*	2.72N	25.07E	34	000	093653	8-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	98K	160656	269	51.2 16	-.00
		CAM.NAD.=	2.78N	29.30E			SWING= 176.	PHASE= 18. EMIS.ANG.= 55.		CAM.RAD.=	1837.2 KM.		SUN AZH= 88.7		
		S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 5	2	64*	2.73N	25.05E	34	000	093653	8-12-67 LUNAR ORB LO.F=80MM B&W	-	NONE	98K	1225000	269	51.3 16	-.00
		CAM.NAD.=	2.78N	29.30E			SWING= 176.	PHASE= 18. EMIS.ANG.= 56.		CAM.RAD.=	1837.2 KM.		SUN AZH= 88.7		
		SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN											: NORTHERN PART OF LAC 78 THEOPHILUS, KANT		



NIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T	L	SUN	SIDE	
SIGN	ROLL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	MAIN	LONG.	#	(ESTIMATED)			TYPE		M=N, MI	PT.	FR.	VERT	LAP	R	
L 5	2	70°	17.31N	26.32E	36	000	160349	B-12-67 LUNAR ORB LO.F=80MM B&W	-	NONE	113K	1412500	283	12.1	20	-...
		CAM.NAD.=	17.11N	27.13E			SWING=190.	PHASE=57.	EMIS.ANG.=13.	CAM.RAD.=	1852.2 KM.	SUN	AZM=95.0			
		S. E. PART OF	LAC 42	M.SERENITY, DAWES				6	N. E. PART OF	LAC 60	J.CAESAR, SABINE, JANSEN					
L 5	1	71°	0.39N	23.82E	37	000	191002	B-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	98K	160656	268	3.4	20	-...
		CAM.NAD.=	0.40N	24.02E			SWING=174.	PHASE=66.	EMIS.ANG.=4.	CAM.RAD.=	1837.2 KM.	SUN	AZM=88.6			
		S. E. PART OF	LAC 60	J.CAESAR, SABINE, JANSEN												
L 5	2	71°	0.40N	23.81E	37	000	191002	B-12-67 LUNAR ORB LO.F=80MM B&W	-	NONE	98K	1225000	268	3.6	20	-...
		CAM.NAD.=	0.41N	24.02E			SWING=174.	PHASE=66.	EMIS.ANG.=4.	CAM.RAD.=	1837.2 KM.	SUN	AZM=88.6			
		S. E. PART OF	LAC 60	J.CAESAR, SABINE, JANSEN				6	N. E. PART OF	LAC 78	THEOPHILUS, KANT					
L 5	1	72°	0.66N	23.84E	37	000	191007	B-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	98K	160656	272	3.4	20	-...
		CAM.NAD.=	0.65N	24.04E			SWING=178.	PHASE=66.	EMIS.ANG.=4.	CAM.RAD.=	1837.2 KM.	SUN	AZM=88.7			
		S. E. PART OF	LAC 60	J.CAESAR, SABINE, JANSEN												
L 5	2	72°	0.67N	23.84E	37	000	191007	B-12-67 LUNAR ORB LO.F=80MM B&W	-	NONE	98K	1225000	272	3.5	20	-...
		CAM.NAD.=	0.66N	24.04E			SWING=178.	PHASE=66.	EMIS.ANG.=4.	CAM.RAD.=	1837.2 KM.	SUN	AZM=88.7			
		S. E. PART OF	LAC 60	J.CAESAR, SABINE, JANSEN				6	N. E. PART OF	LAC 78	THEOPHILUS, KANT					
L 5	1	73°	0.93N	23.86E	37	000	191011	B-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	98K	160656	276	3.4	20	-...
		CAM.NAD.=	0.91N	24.06E			SWING=182.	PHASE=66.	EMIS.ANG.=4.	CAM.RAD.=	1837.2 KM.	SUN	AZM=88.8			
		S. E. PART OF	LAC 60	J.CAESAR, SABINE, JANSEN												
L 5	2	73°	0.94N	23.86E	37	000	191011	B-12-67 LUNAR ORB LO.F=80MM B&W	-	NONE	98K	1225000	277	3.5	20	-...
		CAM.NAD.=	0.91N	24.06E			SWING=183.	PHASE=66.	EMIS.ANG.=4.	CAM.RAD.=	1837.2 KM.	SUN	AZM=88.8			
		S. E. PART OF	LAC 60	J.CAESAR, SABINE, JANSEN				6	N. E. PART OF	LAC 78	THEOPHILUS, KANT					
L 5	1	74°	1.20N	23.88E	37	000	191015	B-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	98K	160656	280	3.4	20	-...
		CAM.NAD.=	1.16N	24.08E			SWING=186	PHASE=66.	EMIS.ANG.=4.	CAM.RAD.=	1837.2 KM.	SUN	AZM=88.9			
		S. E. PART OF	LAC 60	CAESAR, SABINE, JANSEN												
L 5	2	74°	1.21N	23.88E	37	000	191016	B-12-67 LUNAR ORB LO.F=80MM B&W	-	NONE	98K	1225000	281	3.6	20	-...
		CAM.NAD.=	1.17N	24.08E			SWING=187.	PHASE=66.	EMIS.ANG.=4.	CAM.RAD.=	1837.2 KM.	SUN	AZM=88.9			
		S. E. PART OF	LAC 60	J.CAESAR, SABINE, JANSEN												
L 5	1	75°	0.39N	23.86E	38	000	222139	B-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	98K	160656	95	25.9	22	-...
		CAM.NAD.=	0.54N	22.2HE			SWING=1.	PHASE=96.	EMIS.ANG.=27.	CAM.RAD.=	1837.2 KM.	SUN	AZM=88.6			
		S. E. PART OF	LAC 60	J.CAESAR, SABINE, JANSEN												
L 5	2	75°	0.40N	23.85E	38	000	222109	B-12-67 LUNAR ORB LO.F=80MM B&W	-	NONE	98K	1225000	95	25.7	22	-...
		CAM.NAD.=	0.55N	22.28E			SWING=1.	PHASE=95.	EMIS.ANG.=27.	CAM.RAD.=	1837.2 KM.	SUN	AZM=88.6			
		S. E. PART OF	LAC 60	J.CAESAR, SABINE, JANSEN				6	N. E. PART OF	LAC 78	THEOPHILUS, KANT					
L 5	1	76°	0.69N	23.88E	38	000	222114	B-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	98K	160656	94	25.9	22	-...
		CAM.NAD.=	0.82N	22.30E			SWING=0.	PHASE=96.	EMIS.ANG.=27.	CAM.RAD.=	1837.2 KM.	SUN	AZM=88.7			
		S. E. PART OF	LAC 60	J.CAESAR, SABINE, JANSEN												

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR	GMT H SEC (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE M=N,MJ K=KM.	SCALE AT PRIN. PT.	T I L T AZ ANG. FR. VERT	SUN SIDE, ANG. FWD. LAP 8. 8
L 5	2	76	0.69N 23.87E	38 ***	222114	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	98K 1225000	94	25.7 22	-.88	
CAM.NAD.= 0.82N 22.30E SWING= 0. PHASE= 95. EMIS.ANG.= 27. CAM.RAD.= 1837.2 KM. SUN AZM= 88.7													
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 78 THEOPHILUS, KANT													
L 5	1	77	0.98N 23.90E	38 ***	222119	8-12-67	LUNAR ORB HI. 610MM B&W	- NONE	98K 160656	94	25.9 22	-.9	
CAM.NAD.= 1.10N 22.32E SWING= 360. PHASE= 96. EMIS.ANG.= 27. CAM.RAD.= 1837.2 KM. SUN AZM= 89.8													
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 5	2	77	0.99N 23.90E	38 ***	222119	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	98K 1225000	94	25.7 22	-.88	
CAM.NAD.= 1.10N 22.33E SWING= 360. PHASE= 95. EMIS.ANG.= 27. CAM.RAD.= 1837.2 KM. SUN AZM= 88.8													
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 78 THEOPHILUS, KANT													
L 5	1	78*	1.27N 23.93E	38 ***	222124	8-12-67	LUNAR ORB HI. 610MM B&W	- NONE	98K 160656	93	25.9 22	-.7	
CAM.NAD.= 1.39N 22.35E SWING= 359. PHASE= 96. EMIS.ANG.= 27. CAM.RAD.= 1837.2 KM. SUN AZM= 89.0													
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 5	2	78*	1.30N 23.92E	38 ***	222124	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	98K 1225000	93	25.7 22	-.87	
CAM.NAD.= 1.39N 22.35E SWING= 359. PHASE= 95. EMIS.ANG.= 27. CAM.RAD.= 1837.2 KM. SUN AZM= 89.0													
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 78 THEOPHILUS, KANT													
L 5	1	80*	2.35N 17.97E	41 ***	075456	8-13-67	LUNAR ORB HI. 610MM B&W	- NONE	98K 160656	96	13.7 21	-.99	
CAM.NAD.= 2.44N 17.18E SWING= 2. PHASE= 84. EMIS.ANG.= 14. CAM.RAD.= 1837.2 KM. SUN AZM= 89.3													
S. N. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 5	2	80	2.36N 17.96E	41 ***	075456	8-13-67	LUNAR ORB LO.F=80MM B&W	- NONE	98K 1225000	96	13.6 21	-.99	
CAM.NAD.= 2.45N 17.18E SWING= 2. PHASE= 84. EMIS.ANG.= 14. CAM.RAD.= 1837.2 KM. SUN AZM= 89.4													
S. N. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 5	1	81*	2.62N 17.99E	41 ***	075500	8-13-67	LUNAR ORB HI. 610MM B&W	- NONE	98K 160656	95	13.7 21	-.9	
CAM.NAD.= 2.70N 17.20E SWING= 1. PHASE= 84. EMIS.ANG.= 14. CAM.RAD.= 1837.2 KM. SUN AZM= 89.5													
S. N. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 5	2	81	2.63N 17.98E	41 ***	075500	8-13-67	LUNAR ORB LO.F=80MM B&W	- NONE	98K 1225000	95	13.6 21	-.88	
CAM.NAD.= 2.70N 17.20E SWING= 1. PHASE= 84. EMIS.ANG.= 14. CAM.RAD.= 1837.2 KM. SUN AZM= 89.5													
S. N. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 5	1	82*	2.91N 18.01E	41 ***	075505	8-13-67	LUNAR ORB HI. 610MM B&W	- NONE	98K 160656	94	13.7 21	-.9	
CAM.NAD.= 2.96N 17.22E SWING= 359. PHASE= 84. EMIS.ANG.= 14. CAM.RAD.= 1837.2 KM. SUN AZM= 89.6													
S. N. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 5	2	82	2.91N 18.00E	41 ***	075505	8-13-67	LUNAR ORB LO.F=80MM B&W	- NONE	98K 1225000	94	13.6 21	-.88	
CAM.NAD.= 2.96N 17.22E SWING= 359. PHASE= 84. EMIS.ANG.= 14. CAM.RAD.= 1837.2 KM. SUN AZM= 89.6													
S. N. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													
L 5	1	83	3.17N 18.03E	41 ***	075509	8-13-67	LUNAR ORB HI. 610MM B&W	- NONE	98K 160656	93	13.7 21	-.9	
CAM.NAD.= 3.22N 17.24E SWING= 358. PHASE= 84. EMIS.ANG.= 14. CAM.RAD.= 1837.2 KM. SUN AZM= 89.7													
S. N. PART OF LAC 60 J. CAESAR, SABINE, JANSEN													

HIS	DAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T I L T	SUN SIDE.	STUN	ROLL	ON	LAT.	#	TIMES-HR	M	SEC	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	LAP	VERT	X. Y
L	S	2	83	J.18N	18.03E	41	***	****	075509	8-13-67	LUNAR	ORB	LO.F=80MM	B&W	-	NONE	98K	12250000	93	13.6	21	-0.88										
CAM. RAD. = 3.22N 17.24E																SWING = 358.		PHASE = 84.		EMIS. ANG. = 14.		CAM. RAD. = 1837.2 KM.		SUN AZH = 89.7								
S. W. PART OF																LAC 60 J. CAESAR, SABINE, JANSEN																

TOTAL PHOTOS IN THIS GROUP = 190

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+),1), OR(0) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREK; ZP,ZH,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR OR	PHOTO LAT.	PRIN. MAIN	PT. LUNG.	ORB N	GET TIMES-HH	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN. M=N.MI K=KM.	AT PT.	T I L T AZ	SUN SIDE, ANG. FR.	SUN VERT	ANG. ANG.	FWD. LAP R. S
L 1	1	31°	2.54N	47.96E	39	00	0000	134659	8-20-66	LUNAR ORB HI, 610MM B&W	- NONE	243K	398361	234	11.0	10	-...		
CAM.NAD.= 3.44N 49.23E SWING= 53. PHASE= 70. EMIS.ANG.= 13. CAM.RAD.= 1982.2 KM. SUN AZH= 88.9																			
S. E. PART OF LAC 61 TARUNTIUS,LYELL																			
L 1	2	31	2.54N	47.96E	39	00	0000	134659	8-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	293K	3037500	234	11.0	10	-...		
CAM.NAD.= 3.44N 49.24E SWING= 53. PHASE= 70. EMIS.ANG.= 13. CAM.RAD.= 1982.2 KM. SUN AZH= 88.9																			
SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL ; NORTHERN PART OF LAC 79 COLOMBO,NE & LAC 62 M.UNDARUM,S.CRISIUM																			
L 1	4	32°	2.15N	49.96E	39	00	0000	134733	8-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	239K	2975000	227	9.9	12	-65		
CAM.NAD.= 3.08N 50.96E SWING= 46. PHASE= 70. EMIS.ANG.= 11. CAM.RAD.= 1977.2 KM. SUN AZH= 88.9																			
S. E. PART OF LAC 61 TARUNTIUS,LYELL ; LAC 62 M.UNDARUM,S.CRISIUM & LAC 79 COLOMBO,NE																			
L 1	2	41	3.30N	39.16E	41	00	0000	210037	8-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	256K	3200000	244	14.7	5	-...		
CAM.NAD.= 4.28N 41.17E SWING= 63. PHASE= 70. EMIS.ANG.= 17. CAM.RAD.= 1995.2 KM. SUN AZH= 88.8																			
SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL & NORTHERN PART OF LAC 79 COLOMBO,NE,N.NECTAR																			
L 1	1	42°	4.36N	31.86E	43	00	0000	091441	8-21-66	LUNAR ORB HI, 610MM B&W	- NONE	265K	434426	259	16.5	1	-...		
CAM.NAD.= 4.82N 34.44E SWING= 80. PHASE= 70. EMIS.ANG.= 19. CAM.RAD.= 2004.2 KM. SUN AZH= 88.6																			
S. W. PART OF LAC 61 TARUNTIUS,LYELL																			
L 1	2	42°	4.35N	31.87E	43	00	0000	091441	8-21-66	LUNAR ORB LO.F=80MM B&W	- NONE	265K	3312500	259	16.5	1	-...		
CAM.NAD.= 4.82N 34.44E SWING= 80. PHASE= 70. EMIS.ANG.= 19. CAM.RAD.= 2004.2 KM. SUN AZH= 88.6																			
WESTERN PART OF LAC 61 TARUNTIUS,LYELL ; EASTERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN & LAC 79 COLOMBO,NE																			
L 1	2	44	1.18N	46.12E	45	00	0000	112800	8-21-66	LUNAR ORB LO.F=80MM B&W	- NONE	67K	837500	187	1.2	19	-...		
CAM.NAD.= 1.46N 46.16E SWING= 6. PHASE= 70. EMIS.ANG.= 8. CAM.RAD.= 1806.2 KM. SUN AZH= 88.8																			
S. E. PART OF LAC 61 TARUNTIUS,LYELL																			
L 1	2	46	3.17N	31.21E	47	00	0000	182303	8-21-66	LUNAR ORB LO.F=80MM B&W	- NONE	86K	1075000	232	14.8	7	-...		
CAM.NAD.= 3.65N 31.81E SWING= 51. PHASE= 70. EMIS.ANG.= 15. CAM.RAD.= 1825.2 KM. SUN AZH= 88.9																			
S. W. PART OF LAC 61 TARUNTIUS,LYELL & S. E. PART OF LAC 60 J.CAESAR,SABINE,JANSEN																			
L 1	2	47	3.11N	31.63E	47	00	0000	182310	8-21-66	LUNAR ORB LO.F=80MM B&W	- NONE	85K	1062500	231	14.5	8	-...		
CAM.NAD.= 3.57N 32.20E SWING= 50. PHASE= 70. EMIS.ANG.= 15. CAM.RAD.= 1824.2 KM. SUN AZH= 88.9																			
S. W. PART OF LAC 61 TARUNTIUS,LYELL																			

REPRODUCTION OF THE  
 ORIGINAL PAGE IS POOR

HIS SIGN	MAG ROLL	FR. #	PHOTO UN	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN.	AT PT.	T I L T AZ	SUN ANG.	SIDE. ANG.	FWD. LAP
L 1	2	48	2.04N	33.90E	49	***	012251	8-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	72K	900000	218	9.4	14	-.	..
CAM.RAD.= 2.35N 34.15E SWING= 37. PHASE= 70. EMIS.ANG.= 10. CAM.RAD.= 1811.2 KM. SUN AZH= 89.0																		
S. W. PART OF LAC 61 TARUNTIUS,LYELL																		
L 1	2	49	1.88N	34.71E	49	***	012304	8-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	70K	875000	214	9.1	14	-.	51
CAM.RAD.= 2.19N 34.92E SWING= 32. PHASE= 70. EMIS.ANG.= 9. CAM.RAD.= 1809.2 KM. SUN AZH= 88.9																		
S. W. PART OF LAC 61 TARUNTIUS,LYELL																		
L 1	2	50	0.61S	42.34E	51	***	082413	8-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	60K	750000	155	13.1	26	-.	..
CAM.RAD.= .19S 42.15E SWING= 332. PHASE= 70. EMIS.ANG.= 13. CAM.RAD.= 1799.2 KM. SUN AZH= 88.0																		
N. E. PART OF LAC 79 COLUMBO,NE.M.NECTAR & S. E. PART OF LAC 61 TARUNTIUS,LYELL																		
L 1	2	52	0.07S	40.84E	53	***	152259	8-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	59K	737500	314	1.0	28	-.	..
CAM.RAD.= .72S 40.86E SWING= 122. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1798.2 KM. SUN AZH= 87.9																		
NORTHERN PART OF LAC 79 COLUMBO,NE.M.NECTAR & SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL																		
L 1	2	53	0.73S	40.98E	53	***	152301	8-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	59K	737500	319	.9	28	-.	82
CAM.RAD.= .75S 41.00E SWING= 127. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1798.2 KM. SUN AZH= 87.9																		
NORTHERN PART OF LAC 79 COLUMBO,NE.M.NECTAR & SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL																		
L 1	2	54	0.76S	41.13E	53	***	152303	8-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	60K	750000	325	.8	28	-.	82
CAM.RAD.= .78S 41.15E SWING= 133. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZH= 87.9																		
NORTHERN PART OF LAC 79 COLUMBO,NE.M.NECTAR & SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL																		
L 1	2	55	0.79S	41.28E	53	***	152306	8-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	60K	750000	333	.7	28	-.	82
CAM.RAD.= .81S 41.29E SWING= 142. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZH= 87.9																		
NORTHERN PART OF LAC 79 COLUMBO,NE.M.NECTAR & SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL																		
L 1	2	56	0.82S	41.43E	53	***	152308	8-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	60K	750000	344	.6	28	-.	82
CAM.RAD.= .84S 41.44E SWING= 152. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZH= 87.9																		
NORTHERN PART OF LAC 79 COLUMBO,NE.M.NECTAR & SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL																		
L 1	2	68	0.25N	34.45E	54	***	185045	8-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	59K	737500	289	1.4	23	-.	..
CAM.RAD.= .24N 34.49E SWING= 96. PHASE= 66. EMIS.ANG.= 1. CAM.RAD.= 1798.2 KM. SUN AZH= 88.5																		
S. W. PART OF LAC 61 TARUNTIUS,LYELL & N. W. PART OF LAC 79 COLUMBO,NE.M.NECTAR																		
L 1	2	69	0.22N	34.60E	54	***	185048	8-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	59K	737500	289	1.3	23	-.	82
CAM.RAD.= .21N 34.64E SWING= 97. PHASE= 66. EMIS.ANG.= 1. CAM.RAD.= 1798.2 KM. SUN AZH= 88.5																		
S. W. PART OF LAC 61 TARUNTIUS,LYELL & N. W. PART OF LAC 79 COLUMBO,NE.M.NECTAR																		
L 1	2	70	0.19N	34.74E	54	***	185050	8-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	59K	737500	290	1.2	23	-.	82
CAM.RAD.= .18N 34.78E SWING= 98. PHASE= 66. EMIS.ANG.= 1. CAM.RAD.= 1798.2 KM. SUN AZH= 88.4																		
S. W. PART OF LAC 61 TARUNTIUS,LYELL & N. W. PART OF LAC 79 COLUMBO,NE.M.NECTAR																		
L 1	2	71	0.16N	34.89E	54	***	185052	8-22-66	LUNAR	ORB LO.F=80MM B&W	- NONE	59K	737500	292	1.0	24	-.	82
CAM.RAD.= .15N 34.92E SWING= 99. PHASE= 66. EMIS.ANG.= 1. CAM.RAD.= 1798.2 KM. SUN AZH= 88.4																		
S. W. PART OF LAC 61 TARUNTIUS,LYELL & N. W. PART OF LAC 79 COLUMBO,NE.M.NECTAR																		

SUN NUM	HIS #	MAG #	FR. PHOTO #	PRIN. PT. LAT.	ORB LONG.	URB #	GET TIME	GMT -HR M SEC (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	T 1 AZ	L T ANG. FR. ANG. VERT	SUN SIDE. FWD. LAP % X		
L 1	2	72	0.13N	35.04E	54	000	0000	185055	8-22-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	58K	725000	293	0.9 24	-0.88
CAM. RAD. = 1797.2 KM. SUN AZM = 88.4																		
S. W. PART OF LAC 61 TARUNTIUS, LYELL																		
L 1	2	73	0.09N	35.19E	54	000	0000	185057	8-22-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	58K	725000	296	0.7 24	-0.88
CAM. RAD. = 1797.2 KM. SUN AZM = 88.4																		
S. W. PART OF LAC 61 TARUNTIUS, LYELL																		
L 1	2	74	0.06N	35.34E	54	000	0000	185100	8-22-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	58K	725000	299	0.6 24	-0.88
CAM. RAD. = 1797.2 KM. SUN AZM = 88.4																		
S. W. PART OF LAC 61 TARUNTIUS, LYELL																		
L 1	2	75	0.03N	35.48E	54	000	0000	185102	8-22-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	58K	725000	305	0.4 24	-0.88
CAM. RAD. = 1797.2 KM. SUN AZM = 88.4																		
S. W. PART OF LAC 61 TARUNTIUS, LYELL																		
L 1	2	76	0.00S	35.63E	54	000	0000	185104	8-22-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	58K	725000	315	0.3 24	-0.88
CAM. RAD. = 1797.2 KM. SUN AZM = 88.4																		
N. W. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		
L 1	2	77	0.03S	35.78E	54	000	0000	185107	8-22-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	58K	725000	338	0.2 24	-0.88
CAM. RAD. = 1797.2 KM. SUN AZM = 88.3																		
N. W. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		
L 1	2	78	0.07S	35.93E	54	000	0000	185109	8-22-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	58K	725000	21	0.2 25	-0.88
CAM. RAD. = 1797.2 KM. SUN AZM = 88.3																		
N. W. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		
L 1	2	79	0.10S	36.08E	54	000	0000	185112	8-22-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	58K	725000	57	0.3 25	-0.88
CAM. RAD. = 1797.2 KM. SUN AZM = 88.3																		
N. W. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		
L 1	2	80	0.13S	36.23E	54	000	0000	185114	8-22-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	58K	725000	73	0.4 25	-0.88
CAM. RAD. = 1797.2 KM. SUN AZM = 88.3																		
N. W. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		
L 1	2	81	0.16S	36.37E	54	000	0000	185116	8-22-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	58K	725000	81	0.5 25	-0.88
CAM. RAD. = 1797.2 KM. SUN AZM = 88.3																		
N. W. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		
L 1	2	82	0.19S	36.52E	54	000	0000	185119	8-22-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	58K	725000	86	0.6 25	-0.88
CAM. RAD. = 1797.2 KM. SUN AZM = 88.3																		
N. W. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		
L 1	2	83	0.22S	36.67E	54	000	0000	185121	8-22-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	58K	725000	89	0.8 25	-0.88
CAM. RAD. = 1797.2 KM. SUN AZM = 88.2																		
N. W. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		

MIS SION	NAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR (ESTIMATED)	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI ITUDE	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDF. ANG. FR. VERT	FWD. LAP R. S
L 2	2	5	4.25N CAM.NAD.= 4.24N	36.00E 36.03E	52 ***	152453	11-18-66	LUNAR ORB LO.F=80MM B&W EMIS.ANG.= 1.	- NONE CAM.RAD.=	52K 1791.2 KM.	850000	292	1.2 16 SUN AZH= 91.5	-.88
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	1	6	4.22N CAM.NAD.= 4.21N	36.12E 36.15E	52 ***	152455	11-18-66	LUNAR ORB HI. 610MM B&W EMIS.ANG.= 1.	- NONE CAM.RAD.=	52K 1791.2 KM.	85246	287	1.1 16 SUN AZH= 91.5	-.14
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	1	7	4.20N CAM.NAD.= 4.19N	36.25E 36.28E	52 ***	152457	11-18-66	LUNAR ORB HI. 610MM B&W EMIS.ANG.= 1.	- NONE CAM.RAD.=	52K 1791.2 KM.	85246	288	1.0 16 SUN AZH= 91.5	-.13
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	2	7	4.20N CAM.NAD.= 4.18N	36.26E 36.29E	52 ***	152457	11-18-66	LUNAR ORB LO.F=80MM B&W EMIS.ANG.= 1.	- NONE CAM.RAD.=	52K 1791.2 KM.	850000	295	1.0 16 SUN AZH= 91.5	-.88
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	1	8	4.17N CAM.NAD.= 4.16N	36.38E 36.41E	52 ***	152459	11-18-66	LUNAR ORB HI. 610MM B&W EMIS.ANG.= 1.	- NONE CAM.RAD.=	52K 1791.2 KM.	85246	289	.8 16 SUN AZH= 91.5	-.13
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	1	9	4.14N CAM.NAD.= 4.14N	36.51E 36.53E	52 ***	152501	11-18-66	LUNAR ORB HI. 610MM B&W EMIS.ANG.= 1.	- NONE CAM.RAD.=	52K 1791.2 KM.	85246	290	.7 16 SUN AZH= 91.5	-.14
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	2	9	4.14N CAM.NAD.= 4.13N	36.52E 36.54E	52 ***	152501	11-18-66	LUNAR ORB LO.F=80MM B&W EMIS.ANG.= 1.	- NONE CAM.RAD.=	52K 1791.2 KM.	850000	300	.7 16 SUN AZH= 91.5	-.88
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	1	10	4.12N CAM.NAD.= 4.11N	36.65E 36.66E	52 ***	152503	11-18-66	LUNAR ORB HI. 610MM B&W EMIS.ANG.= 1.	- NONE CAM.RAD.=	52K 1791.2 KM.	85246	293	.6 16 SUN AZH= 91.5	-.13
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	1	11	4.09N CAM.NAD.= 4.08N	36.78E 36.79E	52 ***	152506	11-18-66	LUNAR ORB HI. 610MM B&W EMIS.ANG.= 1.	- NONE CAM.RAD.=	52K 1791.2 KM.	85246	296	.5 16 SUN AZH= 91.5	-.13
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	2	11	4.09N CAM.NAD.= 4.08N	36.79E 36.80E	52 ***	152506	11-18-66	LUNAR ORB LO.F=80MM B&W EMIS.ANG.= 1.	- NONE CAM.RAD.=	52K 1791.2 KM.	850000	311	.5 16 SUN AZH= 91.5	-.88
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	1	13	4.04N CAM.NAD.= 4.03N	37.04E 37.04E	52 ***	152510	11-18-66	LUNAR ORB HI. 610MM B&W EMIS.ANG.= 0.	- NONE CAM.RAD.=	52K 1791.2 KM.	85246	314	.2 17 SUN AZH= 91.5	-.13
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	2	13	4.04N CAM.NAD.= 4.03N	37.05E 37.05E	52 ***	152510	11-18-66	LUNAR ORB LO.F=80MM B&W EMIS.ANG.= 0.	- NONE CAM.RAD.=	52K 1791.2 KM.	850000	339	.3 17 SUN AZH= 91.5	-.88
S. W. PART OF LAC 61 TARUNTIUS,LYELL														

LAC 61 TARUNTIUS LYELL

PAGE 180														
MIS MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GHI	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTITUDE	SCALE AT	TILT	SUN SIDE,		
STATION	HULL	OR	LAT.	#	TIMES-HR	M SEC	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.		
"	"	MAIN	"	"	(ESTIMATED)	"	TYPE	"	M=N,HJ	PT.	FR.	LAP		
"	"	"	LONG.	"	"	"	"	"	K=KM.	"	VERT	8. 8		
L 2	1	14	4.01N	37.17E	52	...	152512	11-18-66 LUNAR ORB HI. 610MM B&W	-	NONE	51K	83607	347	0.1 17
			CAM. NAD. = 4.01N	37.17E			SWING = 156.	PHASE = 73. EMIS. ANG. = 0.	CAM. RAD. =	1790.2 KM.		SUN AZM = 91.5	-0.13	
							S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 2	2	14	4.01N	37.18E	52	...	152512	11-18-66 LUNAR ORB LO. F=80MM B&W	-	NONE	51K	637500	7	0.2 17
			CAM. NAD. = 4.01N	37.18E			SWING = 176.	PHASE = 73. EMIS. ANG. = 0.	CAM. RAD. =	1790.2 KM.		SUN AZM = 91.5	-0.88	
							S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 2	1	15	3.99N	37.30E	52	...	152514	11-18-66 LUNAR ORB HI. 610MM B&W	-	NONE	51K	83607	44	0.1 17
			CAM. NAD. = 3.98N	37.30E			SWING = 213.	PHASE = 73. EMIS. ANG. = 0.	CAM. RAD. =	1790.2 KM.		SUN AZM = 91.5	-0.13	
							S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 2	2	15	3.99N	37.31E	52	...	152514	11-18-66 LUNAR ORB LO. F=80MM B&W	-	NONE	51K	637500	37	0.3 17
			CAM. NAD. = 3.98N	37.31E			SWING = 206.	PHASE = 73. EMIS. ANG. = 0.	CAM. RAD. =	1790.2 KM.		SUN AZM = 91.5	-0.88	
							S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 2	1	16	3.96N	37.43E	52	...	152516	11-18-66 LUNAR ORB HI. 610MM B&W	-	NONE	51K	83607	71	0.2 17
			CAM. NAD. = 3.96N	37.42E			SWING = 240.	PHASE = 73. EMIS. ANG. = 0.	CAM. RAD. =	1790.2 KM.		SUN AZM = 91.5	-0.13	
							S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 2	2	16	3.96N	37.44E	52	...	152516	11-18-66 LUNAR ORB LO. F=80MM B&W	-	NONE	51K	637500	57	0.3 17
			CAM. NAD. = 3.96N	37.43E			SWING = 226.	PHASE = 73. EMIS. ANG. = 0.	CAM. RAD. =	1790.2 KM.		SUN AZM = 91.5	-0.88	
							S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 2	1	17	3.93N	37.56E	52	...	152518	11-18-66 LUNAR ORB HI. 610MM B&W	-	NONE	51K	83607	81	0.4 17
			CAM. NAD. = 3.93N	37.55E			SWING = 250.	PHASE = 73. EMIS. ANG. = 0.	CAM. RAD. =	1790.2 KM.		SUN AZM = 91.5	-0.13	
							S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 2	2	17	3.94N	37.57E	52	...	152518	11-18-66 LUNAR ORB LO. F=80MM B&W	-	NONE	51K	637500	69	0.4 17
			CAM. NAD. = 3.93N	37.56E			SWING = 238.	PHASE = 73. EMIS. ANG. = 1.	CAM. RAD. =	1790.2 KM.		SUN AZM = 91.5	-0.88	
							S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 2	1	18	3.91N	37.69E	52	...	152520	11-18-66 LUNAR ORB HI. 610MM B&W	-	NONE	51K	83607	87	0.5 17
			CAM. NAD. = 3.91N	37.67E			SWING = 256.	PHASE = 73. EMIS. ANG. = 1.	CAM. RAD. =	1790.2 KM.		SUN AZM = 91.5	-0.13	
							S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 2	2	18	3.91N	37.70E	52	...	152520	11-18-66 LUNAR ORB LO. F=80MM B&W	-	NONE	51K	637500	76	0.6 17
			CAM. NAD. = 3.91N	37.69E			SWING = 245.	PHASE = 73. EMIS. ANG. = 1.	CAM. RAD. =	1790.2 KM.		SUN AZM = 91.5	-0.88	
							S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 2	1	19	3.88N	37.82E	52	...	152522	11-18-66 LUNAR ORB HI. 610MM B&W	-	NONE	51K	83607	90	0.6 17
			CAM. NAD. = 3.88N	37.80E			SWING = 259.	PHASE = 73. EMIS. ANG. = 1.	CAM. RAD. =	1790.2 KM.		SUN AZM = 91.5	-0.13	
							S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 2	2	19	3.88N	37.83E	52	...	152523	11-18-66 LUNAR ORB LO. F=80MM B&W	-	NONE	51K	637500	81	0.7 17
			CAM. NAD. = 3.88N	37.81E			SWING = 249.	PHASE = 73. EMIS. ANG. = 1.	CAM. RAD. =	1790.2 KM.		SUN AZM = 91.5	-0.88	
							S. W. PART OF	LAC 61 TARUNTIUS, LYELL						



## LAC 61 TARUNTIUS,LYELL

HIS MAG		FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	TILT	SUN SIDE			
STION	ROLL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	ANG.			
#	#	MAIN	LONG.		(ESTIMATED)			TYPE		M=N.MI	AZ	FR.			
										K=KM.	VERT	LAP			
L 2	1	20	3.86N	37.95E	52	000	152524	11-18-66 LUNAR ORB HI. 610MM B&W	-	NONE	51K	83607	92	07 18	-0.13
			CAM-NAD.=	3.86N	37.93E		SWING= 261.	PHASE= 73. EMIS.ANG.= 1.	CAM-RAD.=	1790.2 KM.			SUN AZM= 91.5		
							S. W. PART OF	LAC 61 TARUNTIUS,LYELL							
L 2	2	20	3.86N	37.96E	52	000	152525	11-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	51K	637500	84	08 18	-0.88
			CAM-NAD.=	3.86N	37.94E		SWING= 253.	PHASE= 73. EMIS.ANG.= 1.	CAM-RAD.=	1790.2 KM.			SUN AZM= 91.5		
							S. W. PART OF	LAC 61 TARUNTIUS,LYELL							
L 2	1	21	3.25N	40.95E	52	000	152613	11-18-66 LUNAR ORB HI. 610MM B&W	-	NONE	50K	81967	99	3.8 21	-0.00
			CAM-NAD.=	3.27N	40.84E		SWING= 268.	PHASE= 73. EMIS.ANG.= 4.	CAM-RAD.=	1789.2 KM.			SUN AZM= 91.5		
							SOUTHERN PART OF	LAC 61 TARUNTIUS,LYELL							
L 2	2	21	3.25N	40.95E	52	000	152613	11-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	50K	625000	97	3.8 21	-0.00
			CAM-NAD.=	3.26N	40.84E		SWING= 266.	PHASE= 73. EMIS.ANG.= 4.	CAM-RAD.=	1789.2 KM.			SUN AZM= 91.5		
							SOUTHERN PART OF	LAC 61 TARUNTIUS,LYELL							
L 2	1	22	3.22N	41.08E	52	000	152615	11-18-66 LUNAR ORB HI. 610MM B&W	-	NONE	50K	81967	99	3.9 21	-0.11
			CAM-NAD.=	3.24N	40.96E		SWING= 268.	PHASE= 73. EMIS.ANG.= 4.	CAM-RAD.=	1789.2 KM.			SUN AZM= 91.5		
							SOUTHERN PART OF	LAC 61 TARUNTIUS,LYELL							
L 2	2	22	3.22N	41.08E	52	000	152615	11-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	50K	625000	97	3.9 21	-0.86
			CAM-NAD.=	3.24N	40.97E		SWING= 266.	PHASE= 73. EMIS.ANG.= 4.	CAM-RAD.=	1789.2 KM.			SUN AZM= 91.5		
							SOUTHERN PART OF	LAC 61 TARUNTIUS,LYELL							
L 2	1	23	3.19N	41.21E	52	000	152617	11-18-66 LUNAR ORB HI. 610MM B&W	-	NONE	50K	81967	99	4.0 21	-0.11
			CAM-NAD.=	3.21N	41.09E		SWING= 268.	PHASE= 73. EMIS.ANG.= 4.	CAM-RAD.=	1789.2 KM.			SUN AZM= 91.5		
							SOUTHERN PART OF	LAC 61 TARUNTIUS,LYELL							
L 2	2	23	3.20N	41.22E	52	000	152617	11-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	50K	625000	97	4.1 21	-0.88
			CAM-NAD.=	3.21N	41.10E		SWING= 266.	PHASE= 73. EMIS.ANG.= 4.	CAM-RAD.=	1789.2 KM.			SUN AZM= 91.5		
							SOUTHERN PART OF	LAC 61 TARUNTIUS,LYELL							
L 2	1	24	3.17N	41.34E	52	000	152619	11-18-66 LUNAR ORB HI. 610MM B&W	-	NONE	50K	81967	99	4.2 21	-0.11
			CAM-NAD.=	3.19N	41.22E		SWING= 268.	PHASE= 73. EMIS.ANG.= 4.	CAM-RAD.=	1789.2 KM.			SUN AZM= 91.5		
							SOUTHERN PART OF	LAC 61 TARUNTIUS,LYELL							
L 2	2	24	3.17N	41.35E	52	000	152619	11-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	50K	625000	98	4.2 21	-0.88
			CAM-NAD.=	3.19N	41.23E		SWING= 266.	PHASE= 73. EMIS.ANG.= 4.	CAM-RAD.=	1789.2 KM.			SUN AZM= 91.5		
							SOUTHERN PART OF	LAC 61 TARUNTIUS,LYELL							
L 2	1	25	3.57N	36.34E	53	000	185400	11-18-66 LUNAR ORB HI. 610MM B&W	-	NONE	51K	83607	137	11.9 18	-0.00
			CAM-NAD.=	3.83N	36.10E		SWING= 306.	PHASE= 81. EMIS.ANG.= 12.	CAM-RAD.=	1790.2 KM.			SUN AZM= 91.4		
							S. W. PART OF	LAC 61 TARUNTIUS,LYELL							
L 2	2	25	3.57N	36.35E	53	000	185400	11-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	51K	637500	136	11.9 18	-0.00
			CAM-NAD.=	3.83N	36.11E		SWING= 306.	PHASE= 81. EMIS.ANG.= 12.	CAM-RAD.=	1790.2 KM.			SUN AZM= 91.4		
							S. W. PART OF	LAC 61 TARUNTIUS,LYELL							

MIS SION	NAG #	FR, PHOTO OR MAIN	PRIN. PT. LAT.	ORB LONG.	GET #	GMT TIMES-HR M SEC (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE H=H.MI K=KM.	SCALE AT PRIN. PT.	TILT AZ	SUN SIDE, ANG. FR. ANG. VERT	FWD. LAP X. Y.
L 2	1	26	3.54N	36.48E	53	000 0000 185402	11-18-66	LUNAR ORB HI. 610MM B&W	- NONE	51K	83607	136	12.0 18	- .7
		CAM-NAD. =	3.80N	36.24E		SWING= 306. PHASE= 81. EMIS-ANG.= 12.			CAM-RAD. =	1790.2 KM.		SUN AZM= 91.4		
						S. W. PART OF LAC 61 TARUNTIUS-LYELL								
L 2	2	26	3.54N	36.49E	53	000 0000 185402	11-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	136	12.0 18	- .87
		CAM-NAD. =	3.80N	36.25E		SWING= 305. PHASE= 81. EMIS-ANG.= 12.			CAM-RAD. =	1790.2 KM.		SUN AZM= 91.4		
						S. W. PART OF LAC 61 TARUNTIUS-LYELL								
L 2	1	27	3.51N	36.62E	53	000 0000 185404	11-18-66	LUNAR ORB HI. 610MM B&W	- NONE	51K	83607	136	12.1 18	- .11
		CAM-NAD. =	3.77N	36.37E		SWING= 306. PHASE= 81. EMIS-ANG.= 13.			CAM-RAD. =	1790.2 KM.		SUN AZM= 91.4		
						S. W. PART OF LAC 61 TARUNTIUS-LYELL								
L 2	2	27	3.54N	36.63E	53	000 0000 185404	11-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	135	12.1 18	- .88
		CAM-NAD. =	3.77N	36.38E		SWING= 305. PHASE= 81. EMIS-ANG.= 12.			CAM-RAD. =	1790.2 KM.		SUN AZM= 91.4		
						S. W. PART OF LAC 61 TARUNTIUS-LYELL								
L 2	1	28	3.49N	36.76E	53	000 0000 185407	11-18-66	LUNAR ORB HI. 610MM B&W	- NONE	50K	81967	136	12.2 18	- .7
		CAM-NAD. =	3.75N	36.51E		SWING= 305. PHASE= 81. EMIS-ANG.= 13.			CAM-RAD. =	1789.2 KM.		SUN AZM= 91.4		
						S. W. PART OF LAC 61 TARUNTIUS-LYELL								
L 2	2	28	3.49N	36.77E	53	000 0000 185407	11-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	135	12.2 18	- .87
		CAM-NAD. =	3.75N	36.52E		SWING= 305. PHASE= 81. EMIS-ANG.= 13.			CAM-RAD. =	1789.2 KM.		SUN AZM= 91.4		
						S. W. PART OF LAC 61 TARUNTIUS-LYELL								
L 2	1	29	3.60N	36.31E	54	000 0000 222313	11-18-66	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	317	12.1 19	- .00
		CAM-NAD. =	3.34N	36.55E		SWING= 126. PHASE= 62. EMIS-ANG.= 12.			CAM-RAD. =	1788.2 KM.		SUN AZM= 91.6		
						S. W. PART OF LAC 61 TARUNTIUS-LYELL								
L 2	2	29	3.60N	36.32E	54	000 0000 222313	11-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	317	12.1 19	- .00
		CAM-NAD. =	3.34N	36.55E		SWING= 127. PHASE= 62. EMIS-ANG.= 12.			CAM-RAD. =	1788.2 KM.		SUN AZM= 91.6		
						S. W. PART OF LAC 61 TARUNTIUS-LYELL								
L 2	1	30	3.57N	36.43E	54	000 0000 222315	11-18-66	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	317	12.0 20	- .20
		CAM-NAD. =	3.32N	36.66E		SWING= 127. PHASE= 62. EMIS-ANG.= 12.			CAM-RAD. =	1788.2 KM.		SUN AZM= 91.6		
						S. W. PART OF LAC 61 TARUNTIUS-LYELL								
L 2	2	30	3.57N	36.44E	54	000 0000 222315	11-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	318	12.0 20	- .89
		CAM-NAD. =	3.31N	36.67E		SWING= 127. PHASE= 62. EMIS-ANG.= 12.			CAM-RAD. =	1788.2 KM.		SUN AZM= 91.6		
						S. W. PART OF LAC 61 TARUNTIUS-LYELL								
L 2	1	31	3.55N	36.55E	54	000 0000 222317	11-18-66	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	318	11.9 20	- .18
		CAM-NAD. =	3.29N	36.78E		SWING= 127. PHASE= 62. EMIS-ANG.= 12.			CAM-RAD. =	1788.2 KM.		SUN AZM= 91.6		
						S. W. PART OF LAC 61 TARUNTIUS-LYELL								
L 2	2	31	3.55N	36.56E	54	000 0000 222317	11-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	318	11.9 20	- .89
		CAM-NAD. =	3.29N	36.79E		SWING= 127. PHASE= 62. EMIS-ANG.= 12.			CAM-RAD. =	1788.2 KM.		SUN AZM= 91.6		
						S. W. PART OF LAC 61 TARUNTIUS-LYELL								

HIS STUN	MAG ROLL	FR,PHOTO OR MAIN	PRIN,PT. LAT. LONG.	ORB #	GET TIMES-HR	GHT M SEC (ESTIMATED)	H-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE	SCALE AT PRIN. PT.	T 1 AZ	L T ANG.	SUN SIDE, ANG. FR. VERT	SIDE, FWD. LAP S. R
L 2	1	32	3.52N	36.68E	54	000	222319 11-18-66	LUNAR ORB HI. 610MM B6W	- NONE	49K	80328	318	11.8 20	- .16	
CAM.NAD.=		3.27N	36.90E		SWING= 127.	PHASE= 62.	EMIS.ANG.= 12.		CAM.RAD.=	1788.2 KM.		SUN AZH= 91.6			
S. W. PART OF LAC 61 TARUNTIUS,LYELL															
L 2	2	32	3.52N	36.69E	54	000	222319 11-18-66	LUNAR ORB LO.F=80MM B6W	- NONE	49K	612500	319	11.8 20	- .89	
CAM.NAD.=		3.26N	36.91E		SWING= 128.	PHASE= 62.	EMIS.ANG.= 12.		CAM.RAD.=	1788.2 KM.		SUN AZH= 91.6			
S. W. PART OF LAC 61 TARUNTIUS,LYELL															
L 2	1	35	2.74N	33.62E	57	000	084941 11-19-66	LUNAR ORB HI. 610MM B6W	- NONE	49K	80328	111	.4 22	- .00	
CAM.NAD.=		2.75N	33.61E		SWING= 279.	PHASE= 68.	EMIS.ANG.= 0.		CAM.RAD.=	1788.2 KM.		SUN AZH= 91.4			
S. W. PART OF LAC 61 TARUNTIUS,LYELL															
L 2	2	35	2.74N	33.63E	57	000	084941 11-19-66	LUNAR ORB LO.F=80MM B6W	- NONE	49K	612500	96	.5 22	- .00	
CAM.NAD.=		2.74N	33.61E		SWING= 265.	PHASE= 68.	EMIS.ANG.= 1.		CAM.RAD.=	1788.2 KM.		SUN AZH= 91.4			
S. W. PART OF LAC 61 TARUNTIUS,LYELL															
L 2	1	36	2.72N	33.74E	57	000	084943 11-19-66	LUNAR ORB HI. 610MM B6W	- NONE	49K	80328	109	.6 22	- .12	
CAM.NAD.=		2.72N	33.73E		SWING= 277.	PHASE= 68.	EMIS.ANG.= 1.		CAM.RAD.=	1788.2 KM.		SUN AZH= 91.4			
S. W. PART OF LAC 61 TARUNTIUS,LYELL															
L 2	2	36	2.72N	33.75E	57	000	084943 11-19-66	LUNAR ORB LO.F=80MM B6W	- NONE	49K	612500	97	.6 22	- .88	
CAM.NAD.=		2.72N	33.73E		SWING= 266.	PHASE= 68.	EMIS.ANG.= 1.		CAM.RAD.=	1788.2 KM.		SUN AZH= 91.4			
S. W. PART OF LAC 61 TARUNTIUS,LYELL															
L 2	1	37	2.69N	33.87E	57	000	084945 11-19-66	LUNAR ORB HI. 610MM B6W	- NONE	49K	80328	107	.7 22	- .12	
CAM.NAD.=		2.70N	33.85E		SWING= 276.	PHASE= 68.	EMIS.ANG.= 1.		CAM.RAD.=	1788.2 KM.		SUN AZH= 91.4			
S. W. PART OF LAC 61 TARUNTIUS,LYELL															
L 2	2	37	2.69N	33.87E	57	000	084945 11-19-66	LUNAR ORB LO.F=80MM B6W	- NONE	49K	612500	98	.7 22	- .88	
CAM.NAD.=		2.69N	33.86E		SWING= 266.	PHASE= 68.	EMIS.ANG.= 1.		CAM.RAD.=	1788.2 KM.		SUN AZH= 91.4			
S. W. PART OF LAC 61 TARUNTIUS,LYELL															
L 2	1	38	2.66N	33.99E	57	000	084947 11-19-66	LUNAR ORB HI. 610MM B6W	- NONE	49K	80328	107	.8 22	- .13	
CAM.NAD.=		2.67N	33.97E		SWING= 275.	PHASE= 68.	EMIS.ANG.= 1.		CAM.RAD.=	1788.2 KM.		SUN AZH= 91.4			
S. W. PART OF LAC 61 TARUNTIUS,LYELL															
L 2	2	38	2.67N	34.00E	57	000	084947 11-19-66	LUNAR ORB LO.F=80MM B6W	- NONE	49K	612500	98	.8 22	- .88	
CAM.NAD.=		2.67N	33.98E		SWING= 267.	PHASE= 68.	EMIS.ANG.= 1.		CAM.RAD.=	1788.2 KM.		SUN AZH= 91.4			
S. W. PART OF LAC 61 TARUNTIUS,LYELL															
L 2	1	39	2.64N	34.11E	57	000	084949 11-19-66	LUNAR ORB HI. 610MM B6W	- NONE	49K	80328	106	.9 23	- .13	
CAM.NAD.=		2.65N	34.09E		SWING= 274.	PHASE= 68.	EMIS.ANG.= 1.		CAM.RAD.=	1788.2 KM.		SUN AZH= 91.4			
S. W. PART OF LAC 61 TARUNTIUS,LYELL															
L 2	2	39	2.64N	34.12E	57	000	084949 11-19-66	LUNAR ORB LO.F=80MM B6W	- NONE	49K	612500	99	1.0 23	- .88	
CAM.NAD.=		2.64N	34.10E		SWING= 267.	PHASE= 68.	EMIS.ANG.= 1.		CAM.RAD.=	1788.2 KM.		SUN AZH= 91.4			
S. W. PART OF LAC 61 TARUNTIUS,LYELL															

MIS SION	MAG ROLL	FR. PHOTO OR LAT.	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HH M SEC (I=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE, ANG. ANG. FR. VERT	FWD. LAP S. S
L 2	1	40	2.61N	34.23E	57 ***	084951	11-19-66	LUNAR ORB HI. 610MM 86W	- NONE	49K	80328	105	1.0 23	-.14
		CAM. HAD. =	2.62N	34.21E	SWING= 274.	PHASE= 68.		EMIS. ANG. = 1.	CAM. RAD. =	1788.2 KM.		SUN	AZM= 91.4	
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	2	40	2.62N	34.24E	57 ***	084951	11-19-66	LUNAR ORB LO.F=80MM 86W	- NONE	49K	612500	99	1.1 23	-.88
		CAM. HAD. =	2.62N	34.21E	SWING= 267.	PHASE= 68.		EMIS. ANG. = 1.	CAM. RAD. =	1788.2 KM.		SUN	AZM= 91.4	
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	1	41	2.59N	34.36E	57 ***	084953	11-19-66	LUNAR ORB HI. 610MM 86W	- NONE	49K	80328	105	1.2 23	-.14
		CAM. HAD. =	2.60N	34.32E	SWING= 273.	PHASE= 68.		EMIS. ANG. = 1.	CAM. RAD. =	1788.2 KM.		SUN	AZM= 91.4	
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	2	41	2.59N	34.37E	57 ***	084953	11-19-66	LUNAR ORB LO.F=80MM 86W	- NONE	49K	612500	99	1.2 23	-.88
		CAM. HAD. =	2.60N	34.33E	SWING= 268.	PHASE= 68.		EMIS. ANG. = 1.	CAM. RAD. =	1788.2 KM.		SUN	AZM= 91.4	
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	1	42	2.56N	34.48E	57 ***	084955	11-19-66	LUNAR ORB HI. 610MM 86W	- NONE	49K	80328	105	1.3 23	-.14
		CAM. HAD. =	2.57N	34.47E	SWING= 273.	PHASE= 68.		EMIS. ANG. = 1.	CAM. RAD. =	1788.2 KM.		SUN	AZM= 91.4	
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 2	2	42	2.56N	34.49E	57 ***	084955	11-19-66	LUNAR ORB LO.F=80MM 86W	- NONE	49K	612500	99	1.3 23	-.88
		CAM. HAD. =	2.57N	34.45E	SWING= 268.	PHASE= 68.		EMIS. ANG. = 1.	CAM. RAD. =	1788.2 KM.		SUN	AZM= 91.4	
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 3	2	5	3.10N	34.22E	44 ***	100041	2-15-67	LUNAR ORB LO.F=80MM 86W	- NONE	60K	750000	285	1.7 13	-.00
		CAM. HAD. =	3.08N	34.28E	SWING= 85.	PHASE= 75.		EMIS. ANG. = 2.	CAM. RAD. =	1799.2 KM.		SUN	AZM= 92.3	
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 3	1	6	3.04N	34.37E	44 ***	100043	2-15-67	LUNAR ORB HI. 610MM 86W	- NONE	60K	98361	282	1.5 13	-.8
		CAM. HAD. =	3.03N	34.42E	SWING= 82.	PHASE= 75.		EMIS. ANG. = 2.	CAM. RAD. =	1799.2 KM.		SUN	AZM= 92.3	
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 3	2	9	2.88N	34.81E	44 ***	100051	2-15-67	LUNAR ORB LO.F=80MM 86W	- NONE	59K	737500	282	1.1 14	-.88
		CAM. HAD. =	2.87N	34.85E	SWING= 82.	PHASE= 75.		EMIS. ANG. = 1.	CAM. RAD. =	1798.2 KM.		SUN	AZM= 92.3	
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 3	1	10	2.82N	34.95E	44 ***	100053	2-15-67	LUNAR ORB HI. 610MM 86W	- NONE	59K	96721	277	.9 14	-.10
		CAM. HAD. =	2.82N	34.98E	SWING= 77.	PHASE= 75.		EMIS. ANG. = 1.	CAM. RAD. =	1798.2 KM.		SUN	AZM= 92.3	
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 3	2	11	2.77N	35.10E	44 ***	100056	2-15-67	LUNAR ORB LO.F=80MM 86W	- NONE	59K	737500	280	.8 14	-.88
		CAM. HAD. =	2.76N	35.13E	SWING= 79.	PHASE= 75.		EMIS. ANG. = 1.	CAM. RAD. =	1798.2 KM.		SUN	AZM= 92.2	
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 3	1	12	2.71N	35.25E	44 ***	100058	2-15-67	LUNAR ORB HI. 610MM 86W	- NONE	59K	96721	271	.8 14	-.10
		CAM. HAD. =	2.71N	35.27E	SWING= 70.	PHASE= 75.		EMIS. ANG. = 1.	CAM. RAD. =	1798.2 KM.		SUN	AZM= 92.2	
S. W. PART OF LAC 61 TARUNTIUS,LYELL														

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



MIS SION	MAG KULL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. N	ORB N	GET TIMES-HR	GMT M SEC (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	T I L T AZ ANG.	SUN SIDE, ANG. FR. VERT	FWD. LAP R, K
L 3	2	25	U.80S	41.99E	45	...	133204	2-15-67	LUNAR ORB LO.F=80MM 86W	-	NONE	56K	700000	199	3.6 23	...
CAM.NAD.= .69S 42.03E SWING= 359. PHASE= 66. EMIS.ANG.= 4. CAM.RAD.= 1795.2 KM. SUN AZM= 91.3																
NORTHERN PART OF LAC 79 COLOMBO,NE.M.NECTAR & SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL																
L 3	2	33	U.94S	42.54E	46	...	170114	2-15-67	LUNAR ORB LO.F=80MM 86W	-	NONE	57K	712500	22	19.8 25	...
CAM.NAD.= 1.57S 42.28E SWING= 181. PHASE= 73. EMIS.ANG.= 20. CAM.RAD.= 1796.2 KM. SUN AZM= 91.2																
NORTHERN PART OF LAC 79 COLOMBO,NE.M.NECTAR & SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL																
L 4	1	60	13.58S	48.79E	12	...	170326	5-14-67	LUNAR ORB HI. 610MM 86W	-	NONE	2738K	4488525	319	.7 23	-.51
CAM.NAD.= 14.43S 49.54E SWING= 145. PHASE= 66. EMIS.ANG.= 2. CAM.RAD.= 4477.2 KM. SUN AZM= 83.6																
LAC 79 COLOMBO,NE.M.NECTAR ; LAC 80 LANGRENUS,M.FERT. ; LAC 97 FRACASTORIUS,S.NECTAR & LAC 98 PETAVIUS,HOL																
L 4	1	61	14.14N	49.69E	12	...	173428	5-14-67	LUNAR ORB HI. 610MM 86W	-	NONE	2734K	4481967	278	1.2 25	-.49
CAM.NAD.= 13.87N 51.63E SWING= 93. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 4473.2 KM. SUN AZM= 96.2																
LAC 61 TARUNTIUS,LYELL ; LAC 62 M.UNDARUM,S.CRISIUM ; LAC 43 MACROBIUS,PROCLUS & LAC 44 CLEOMEDES,M.																
L 4	2	619	14.14N	49.69E	12	...	173428	5-14-67	LUNAR ORB LO.F=80MM 86W	-	NONE	2734K	34175000	278	1.2 25	-.81
CAM.NAD.= 13.87N 51.63E SWING= 94. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 4473.2 KM. SUN AZM= 96.2																
DEGRADED NEGATIVE & LAC 61 TARUNTIUS,LYELL																
L 4	1	65	14.90S	43.30E	13	...	050433	5-15-67	LUNAR ORB HI. 610MM 86W	-	NONE	2735K	4483607	143	.4 24	-.49
CAM.NAD.= 14.44S 42.95E SWING= 329. PHASE= 67. EMIS.ANG.= 1. CAM.RAD.= 4474.2 KM. SUN AZM= 82.8																
EASTERN PART OF LAC 79 COLOMBO,NE ; EASTERN PART OF LAC 97 FRACASTORIUS,S.NECTAR & LAC 61 TARUNTIUS,LYELL																
L 4	1	66	13.47N	43.04E	13	...	053534	5-15-67	LUNAR ORB HI. 610MM 86W	-	NONE	2731K	4477049	258	1.2 24	-.33
CAM.NAD.= 13.07N 44.98E SWING= 72. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 4470.2 KM. SUN AZM= 95.7																
CENTRAL PART OF LAC 61 TARUNTIUS,LYELL ; EASTERN PART OF LAC 43 MACROBIUS, & NORTHERN PART OF LAC 79 COLOMBO,NE.M																
L 4	2	669	13.47N	43.04E	13	...	053534	5-15-67	LUNAR ORB LO.F=80MM 86W	-	NONE	2731K	34137500	258	1.2 24	-.74
CAM.NAD.= 13.07N 44.98E SWING= 72. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 4470.2 KM. SUN AZM= 95.7																
DEGRADED NEGATIVE & LAC 61 TARUNTIUS,LYELL																
L 4	1	72	15.77S	37.86E	14	...	170548	5-15-67	LUNAR ORB HI. 610MM 86W	-	NONE	2732K	4478689	131	1.2 24	-.47
CAM.NAD.= 14.50S 36.35E SWING= 316. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4471.2 KM. SUN AZM= 82.2																
WESTERN PART OF LAC 79 COLOMBO,NE ; CENTRAL PART OF LAC 97 FRACASTORIUS,S.NECTAR & LAC 61 TARUNTIUS,LYELL																
L 4	1	73	12.53N	37.59E	14	...	173646	5-15-67	LUNAR ORB HI. 610MM 86W	-	NONE	2727K	4470492	209	.9 25	-.29
CAM.NAD.= 13.82N 38.33E SWING= 23. PHASE= 64. EMIS.ANG.= 2. CAM.RAD.= 4466.2 KM. SUN AZM= 95.4																
WESTERN PART OF LAC 61 TARUNTIUS,LYELL ; CENTRAL PART OF LAC 43 MACROBIUS, & N. N. PART OF LAC 79 COLOMBO,NE.M																
L 4	2	739	12.54N	37.59E	14	...	173646	5-15-67	LUNAR ORB LO.F=80MM 86W	-	NONE	2727K	34087500	209	.9 25	...
CAM.NAD.= 13.82N 38.33E SWING= 23. PHASE= 64. EMIS.ANG.= 2. CAM.RAD.= 4466.2 KM. SUN AZM= 95.4																
DEGRADED NEGATIVE ; LAC 61 TARUNTIUS,LYELL ; >1/2 MOON SPHERE & LAC 119 RHEITA,JAHS																
L 4	1	77	14.93S	30.11E	15	...	050718	5-16-67	LUNAR ORB HI. 610MM 86W	-	NONE	2730K	4475410	141	.4 23	-.49
CAM.NAD.= 14.46S 29.77E SWING= 327. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 4469.2 KM. SUN AZM= 83.0																
LAC 79 COLOMBO,NE ; LAC 78 THEOPHILUS ; LAC 96 ALTAI SCAR ; LAC 97 FRACASTORIUS,S.NECTAR & LAC 60 J.CAESAR,SARI																

MIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GHT M SEC	N-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE	SCALE AT PRIN. M=N.MI K=KM.	T I L T AZ	SUN SIDE, ANG. FR. VERT	SIDE, ANG. FR. LAP B. S
L 4	1	78	13 JUN 30.21E	15	053813	053813	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2722K 4462295	248	1.0 24	-0.40
CAM.NAD.= 13.86N 31.68E SWING= 63. PHASE= 64. EMIS.ANG.= 3. CAM.RAD.= 4461.2 KM. SUN AZM= 95.4														
LAC 61 TARUNTIUS,LYELL ; LAC 60 J.CAESAR,SABINE,JANSEN ; LAC 43 MACHOBIUS,PROCLUS 6 LAC 42 M.SERENITY,D														
L 4	2	78	13 JUN 30.21E	15	053813	053813	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2722K 3402500	248	1.0 24	-0.76
CAM.NAD.= 13.87N 31.68E SWING= 63. PHASE= 64. EMIS.ANG.= 3. CAM.RAD.= 4461.2 KM. SUN AZM= 95.4														
LAC 61 TARUNTIUS,LYELL ; >1/2 MOON SPHERE ; LAC 13 ARISTOTE., LAC 62 M.UNDARUM,S.CRISIUM 6 LAC 113 MAUROLYC														
L 4	2	91	42 JUN 25.72E	17	061439	061439	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2947K 36837500	100	2.1 24	-0.00
CAM.NAD.= 42.80N 20.90E SWING= 265. PHASE= 72. EMIS.ANG.= 6. CAM.RAD.= 4686.2 KM. SUN AZM= 112.5														
LAC 26 EUDOXUS,BURG ; >1/2 MOON SPHERE ; LAC 1 N.POLE NEARSIDE BYRD,PEARL LAC 16														
L 4	2	103	41 JUN 11.28E	19	061816	061816	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2927K 36587500	107	1.7 22	-0.00
CAM.NAD.= 42.76N 7.57E SWING= 272. PHASE= 72. EMIS.ANG.= 5. CAM.RAD.= 4666.2 KM. SUN AZM= 110.7														
LAC 26 EUDOXUS,BURG ; >1/2 MOON SPHERE ; LAC 1 N.POLE NEARSIDE BYRD,PEARL LAC 6														
L 4	2	108	14 JUN 2.36N	20	071651	071651	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2719K 33987500	76	0.5 21	-0.12
CAM.NAD.= 14.45S 3.17W SWING= 262. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4458.2 KM. SUN AZM= 83.8														
LAC 77 PTOLMAEUS, ; >1/2 MOON SPHERE ; LAC 126 CLAVIUS,M ; LAC 25 CASSINI,ALPS MTS 6 LAC 61 TARUNTIUS,LY														
L 4	2	109	13 JUN 3.58N	20	074732	074732	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2693K 33662500	267	1.3 21	-0.07
CAM.NAD.= 13.89N 1.48W SWING= 82. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4432.2 KM. SUN AZM= 94.7														
LAC 59 M.VAPORUM,HYGINUS ; >1/2 MOON SPHERE ; LAC 12 PLATO,ALPINE VAL. 6 LAC 61 TARUNTIUS,LY														
L 4	2	122	42 JUN 9.24N	22	082411	082411	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2895K 36187500	105	1.4 21	-0.22
CAM.NAD.= 42.76N 12.27W SWING= 270. PHASE= 73. EMIS.ANG.= 4. CAM.RAD.= 4634.2 KM. SUN AZM= 109.1														
LAC 25 CASSINI,AL ; >1/2 MOON SPHERE ; LAC 76 RIPHAUS,M ; LAC 1 N.POLE NEARSIDE BYRD,PEARL 6 LAC 14 ENDYMION,STRA														
L 4	2	177	38 JUN 67.86E	31	094529	094529	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	5492K 68649999	290	7.6 15	-0.00
CAM.NAD.= 33.96N 99.33E SWING= 282. PHASE= 108. EMIS.ANG.= 33. CAM.RAD.= 7231.2 KM. SUN AZM= 258.7														
LAC 28 GAUSS,MESSALA,ZENO ; >1/2 MOON SPHERE ; LAC 61 TARUNTIUS,LYELL ; LAC 99 HUMBOLT,GIBBS 6 LAC 5 PETERHANN,														
L 4	2	184	35 JUN 69.32E	33	013032	013032	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	5790K 72374999	259	6.6 7	-0.00
CAM.NAD.= 34.03S 97.52E SWING= 269. PHASE= 113. EMIS.ANG.= 30. CAM.RAD.= 7529.2 KM. SUN AZM= 275.8														
LAC 115 FUNNERIUS ; >1/2 MOON SPHERE ; LAC 114 RHEITA,JA ; LAC 61 TARUNTIUS,LYELL 6 LAC 44 CLEOMEDES,M.C														
L 4	1	191	38 JUN 53.79E	33	094706	094706	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	5503K 9021311	288	7.7 16	-0.00
CAM.NAD.= 33.95N 86.05E SWING= 282. PHASE= 107. EMIS.ANG.= 34. CAM.RAD.= 7242.2 KM. SUN AZM= 257.6														
LAC 27 GEMINUS,AT ; >1/4 MOONS SPHERE ; LAC 4 METON,DESIT ; LAC 5 PETERHANN, HAYN 6 LAC 61 TARUNTIUS,LYE														
L 4	1	192	38 JUN 53.84E	33	094709	094709	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	5504K 9022951	288	7.7 16	-0.90
CAM.NAD.= 33.93N 86.05E SWING= 282. PHASE= 107. EMIS.ANG.= 34. CAM.RAD.= 7243.2 KM. SUN AZM= 257.7														
LAC 27 GEMINUS,AT ; >1/4 MOONS SPHERE ; LAC 4 METON,DESIT ; LAC 5 PETERHANN, HAYN 6 LAC 61 TARUNTIUS,LYE														
L 5	2	38	0.93S	49	094936	094936	8-10-67	LUNAR ORB LO.F=80MM B&W	-	NONE	103K 1287500	269	59.5 16	-0.00
CAM.NAD.= 0.91S 55.52E SWING= 177. PHASE= 8. EMIS.ANG.= 66. CAM.RAD.= 1842.2 KM. SUN AZM= 88.2														
N. E. PART OF LAC 79 COLOMBO,NE ; SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL 6 LAC 62 M.UNDARUM,S.CRISIUM														

MIS SION	MAG ROLL	FR, PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB M	GET TIMES-HR M SEC (ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M, KM PT.	T I L Y AZ ANG. ANG. FR. VERT	SUN SIDE, FWD. LAP B. K
L 5	2	41	2.04S 46.94E	21	***	161127	8-10-67	LUNAR ORB LO.F=80MM B&W	- NONE	103K 1287500	274 53.7 17	-.00
CAM-NAD.= 2.40S 51.87E SWING= 179. PHASE= 15. EMIS-ANG.= 59. CAM-RAD.= 1842.2 KM. SUN AZM= 87.8												
NORTHERN PART OF LAC 79 COLUMBO, NE. H. NECTAR 6 SOUTHERN PART OF LAC 61 TARUNTIUS, LYELL												
L 5	2	42	0.98S 44.08E	23	***	223407	8-10-67	LUNAR ORB LO.F=80MM B&W	- NONE	102K 1275000	268 51.1 18	-.00
CAM-NAD.= .88S 48.48E SWING= 176. PHASE= 17. EMIS-ANG.= 55. CAM-RAD.= 1841.2 KM. SUN AZM= 88.2												
NORTHERN PART OF LAC 79 COLUMBO, NE. H. NECTAR 6 SOUTHERN PART OF LAC 61 TARUNTIUS, LYELL												
L 5	2	45	0.96S 42.91E	26	***	080730	8-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	102K 1275000	270 4.8 21	-.88
CAM-NAD.= .97S 43.19E SWING= 176. PHASE= 64. EMIS-ANG.= 5. CAM-RAD.= 1841.2 KM. SUN AZM= 88.1												
N. E. PART OF LAC 79 COLUMBO, NE. H. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL												
L 5	2	46	0.69S 42.93E	26	***	080735	8-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	102K 1275000	273 4.8 21	-.88
CAM-NAD.= .71S 43.22E SWING= 179. PHASE= 64. EMIS-ANG.= 5. CAM-RAD.= 1841.2 KM. SUN AZM= 88.2												
N. E. PART OF LAC 79 COLUMBO, NE. H. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL												
L 5	2	47	0.42S 42.96E	26	***	080739	8-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	102K 1275000	277 4.8 21	-.88
CAM-NAD.= .45S 43.24E SWING= 182. PHASE= 64. EMIS-ANG.= 5. CAM-RAD.= 1841.2 KM. SUN AZM= 88.3												
N. E. PART OF LAC 79 COLUMBO, NE. H. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL												
L 5	2	48	1.25S 42.97E	27	***	111835	8-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	102K 1275000	96 24.7 23	-.00
CAM-NAD.= 1.08S 41.42E SWING= 2. PHASE= 93. EMIS-ANG.= 26. CAM-RAD.= 1841.2 KM. SUN AZM= 87.9												
N. E. PART OF LAC 79 COLUMBO, NE. H. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL												
L 5	2	49	0.96S 43.00E	27	***	111840	8-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	102K 1275000	95 24.7 23	-.88
CAM-NAD.= .81S 41.45E SWING= 1. PHASE= 93. EMIS-ANG.= 26. CAM-RAD.= 1841.2 KM. SUN AZM= 88.0												
N. E. PART OF LAC 79 COLUMBO, NE. H. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL												
L 5	2	50	0.66S 43.02E	27	***	111845	8-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	102K 1275000	95 24.7 23	-.88
CAM-NAD.= .52S 41.47E SWING= 0. PHASE= 93. EMIS-ANG.= 26. CAM-RAD.= 1841.2 KM. SUN AZM= 88.1												
N. E. PART OF LAC 79 COLUMBO, NE. H. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL												
L 5	2	51	0.37S 43.05E	27	***	111850	8-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	102K 1275000	94 24.7 23	-.88
CAM-NAD.= .24S 41.50E SWING= 360. PHASE= 93. EMIS-ANG.= 26. CAM-RAD.= 1841.2 KM. SUN AZM= 88.3												
N. E. PART OF LAC 79 COLUMBO, NE. H. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL												
L 5	1	52	2.91N 35.59E	28	***	143052	8-11-67	LUNAR ORB HI. 610MM B&W	- NONE	101K 165574	269 51.6 17	-.00
CAM-NAD.= 2.95N 40.00E SWING= 177. PHASE= 17. EMIS-ANG.= 56. CAM-RAD.= 1840.2 KM. SUN AZM= 89.4												
S. W. PART OF LAC 61 TARUNTIUS, LYELL												
L 5	2	52	2.92N 35.54E	28	***	143052	8-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	101K 1262500	269 51.7 17	-.00
CAM-NAD.= 2.96N 40.00E SWING= 177. PHASE= 17. EMIS-ANG.= 56. CAM-RAD.= 1840.2 KM. SUN AZM= 89.4												
S. W. PART OF LAC 61 TARUNTIUS, LYELL 1 S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN 1 LAC 78 THEOPHILUS 6 LAC 79 CO												
L 5	1	55	2.21N 34.19E	31	***	000400	8-12-67	LUNAR ORB HI. 610MM B&W	- NONE	100K 163934	272 8.3 21	-.00
CAM-NAD.= 2.19N 34.67E SWING= 177. PHASE= 60. EMIS-ANG.= 9. CAM-RAD.= 1839.2 KM. SUN AZM= 89.3												
S. W. PART OF LAC 61 TARUNTIUS, LYELL												



MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT.	ORB LONG.	GET TIME	GMT HR M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE	SCALE AT PRIN. M=N.MI K=KM.	T I L T AZ	SUN SIDE ANG. FR. VERT	SUN SIDE ANG. FWD. LAP B. B
L 5	2	55	2.22N	34.18E	31	000400	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	100K	1250000	272	8.5 21	-.00
CAM.NAD.= 2.20N 34.67E SWING= 178. PHASE= 60. EMIS.ANG.= 9.														
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	1	56	2.48N	34.21E	31	000405	8-12-67	LUNAR ORB HI. 610MM B&W	- NONE	100K	163934	273	8.3 21	-.10
CAM.NAD.= 2.45N 34.69E SWING= 179. PHASE= 60. EMIS.ANG.= 9.														
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	2	56	2.49N	34.20E	31	000405	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	100K	1250000	274	8.5 21	-.88
CAM.NAD.= 2.46N 34.69E SWING= 179. PHASE= 60. EMIS.ANG.= 9.														
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	1	57	2.75N	34.23E	31	000409	8-12-67	LUNAR ORB HI. 610MM B&W	- NONE	100K	163934	275	8.3 21	-.10
CAM.NAD.= 2.71N 34.71E SWING= 181. PHASE= 60. EMIS.ANG.= 9.														
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	2	57	2.70N	34.22E	31	000409	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	100K	1250000	275	8.5 21	-.88
CAM.NAD.= 2.71N 34.71E SWING= 181. PHASE= 60. EMIS.ANG.= 9.														
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	1	58	3.03N	34.25E	31	000413	8-12-67	LUNAR ORB HI. 610MM B&W	- NONE	100K	163934	277	8.3 21	-.10
CAM.NAD.= 2.96N 34.73E SWING= 183. PHASE= 60. EMIS.ANG.= 9.														
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	2	58	3.04N	34.25E	31	000414	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	100K	1250000	277	8.5 21	-.88
CAM.NAD.= 2.97N 34.74E SWING= 183. PHASE= 60. EMIS.ANG.= 9.														
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	1	59	2.17N	34.30E	32	031509	8-12-67	LUNAR ORB HI. 610MM B&W	- NONE	100K	163934	96	22.6 23	-.00
CAM.NAD.= 2.32N 32.93E SWING= 1. PHASE= 91. EMIS.ANG.= 24.														
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	2	59	2.18N	34.29E	32	031509	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	100K	1250000	96	22.4 22	-.00
CAM.NAD.= 2.33N 32.93E SWING= 1. PHASE= 91. EMIS.ANG.= 24.														
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	1	60	2.47N	34.33E	32	031514	8-12-67	LUNAR ORB HI. 610MM B&W	- NONE	100K	163934	95	22.6 23	-.9
CAM.NAD.= 2.60N 32.95E SWING= 1. PHASE= 91. EMIS.ANG.= 24.														
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	2	60	2.48N	34.32E	32	031514	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	100K	1250000	95	22.4 23	-.88
CAM.NAD.= 2.61N 32.95E SWING= 1. PHASE= 91. EMIS.ANG.= 24.														
S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	1	61	2.76N	34.35E	32	031518	8-12-67	LUNAR ORB HI. 610MM B&W	- NONE	100K	163934	94	22.6 23	-.9
CAM.NAD.= 2.88N 32.98E SWING= 0. PHASE= 91. EMIS.ANG.= 24.														
S. W. PART OF LAC 61 TARUNTIUS,LYELL														

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	TILT	SUN	SIDE,
SUN	ROLL	OR	LAT.	#	TIMES-HR	M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD,
#	#	MAIN	LONG.	(#=ESTIMATED)						TYPE		M=N.MI	PT.	FR.	LAP		
		#										K=KM.		VERT	R. %		
L 5	2	61	2.77N	34.35E	32	***	031518	8-12-67	LUNAR	ORB LO.F=80MM B&W	- NONE	100K	1250000	94	22.4	23	-.88
			CAM.NAD.=	2.88N	32.98E	SWING=	0.	PHASE=	91.	EMIS.ANG.=	24.	CAM.RAD.=	1839.2 KM.	SUN AZH=	89.6		
			S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	1	62	3.06N	34.38E	32	***	031523	8-12-67	LUNAR	ORB HI. 610MM B&W	- NONE	100K	163934	94	22.6	23	-.8
			CAM.NAD.=	3.16N	33.00E	SWING=	359.	PHASE=	91.	EMIS.ANG.=	24.	CAM.RAD.=	1839.2 KM.	SUN AZH=	89.7		
			S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	2	62	3.07N	34.37E	32	***	031523	8-12-67	LUNAR	ORB LO.F=80MM B&W	- NONE	100K	1250000	94	22.4	23	-.87
			CAM.NAD.=	3.16N	33.00E	SWING=	359.	PHASE=	91.	EMIS.ANG.=	24.	CAM.RAD.=	1839.2 KM.	SUN AZH=	89.7		
			S. W. PART OF LAC 61 TARUNTIUS,LYELL														
L 5	2	63	0.36S	32.80E	33	***	062531	8-12-67	LUNAR	ORB LO.F=80MM B&W	- NONE	99K	1237500	95	29.0	23	-.00
			CAM.NAD.=	.20S	30.97E	SWING=	0.	PHASE=	98.	EMIS.ANG.=	31.	CAM.RAD.=	1838.2 KM.	SUN AZH=	88.3		
			N. W. PART OF LAC 79 COLUMBU,NE.M.NECTAR														
			6 S. W. PART OF LAC 61 TARUNTIUS,LYELL														

TOTAL PHOTOS IN THIS GROUP = 169

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (O) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HS8= HASSELBLAD; MAUR= MAURER; ZF,ZB,ZS = ZEISS LENS(PLANAR,CIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NFG, AT PP IF ALT NOT 0.0

MIS	MAG	PR	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE.	
SIUN	KULL	OR	LAT.				TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	MAIN		LONG.			(ESTIMATED)			TYPE		M=N.MI	PT.		FR.	LAP		
												K=KM.			VERT		8. 8	
L 1	2	26	1.62N	71.78E	30	000	051116		8-19-66	LUNAR ORB LO.F=80MM B&W	-	NONE	228K	2850000	201	7.2	17	-.00
CAM.NAD.= 2.51N 72.13E SWING= 30. PHASE= 70. EMIS.ANG.= 8. CAM.RAD.= 1967.2 KM. SUN AZH= 88.9																		
S. W. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTH & N. W. PART OF LAC 81 ANSGARIUS, & LAC 62 M.UNDARUM, S. CRISIUM																		
L 1	1	27	1.84N	69.77E	31	000	084845		8-19-66	LUNAR ORB HI. 610MM B&W	-	NONE	228K	373770	207	5.7	17	-.00
CAM.NAD.= 2.50N 70.12E SWING= 26. PHASE= 70. EMIS.ANG.= 6. CAM.RAD.= 1967.2 KM. SUN AZH= 89.0																		
S. E. PART OF LAC 62 M.UNDARUM, S. CRISIUM & S. W. PART OF LAC 43 NEPER, SCHUBERT, N. SMYTH																		
L 1	2	27	1.84N	69.77E	31	000	084845		8-19-66	LUNAR ORB LO.F=80MM B&W	-	NONE	228K	2850000	207	5.7	17	-.00
CAM.NAD.= 2.50N 70.12E SWING= 26. PHASE= 70. EMIS.ANG.= 6. CAM.RAD.= 1967.2 KM. SUN AZH= 89.0																		
S. E. PART OF LAC 62 M.UNDARUM, S. CRISIUM & S. W. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTH & LAC 80 LANGRENUS, & LAC 81 AN																		
L 1	1	29	1.58N	61.41E	35	000	231835		8-19-66	LUNAR ORB HI. 610MM B&W	-	NONE	231K	378689	206	7.8	16	-.00
CAM.NAD.= 2.52N 61.88E SWING= 25. PHASE= 70. EMIS.ANG.= 9. CAM.RAD.= 1970.2 KM. SUN AZH= 88.9																		
S. E. PART OF LAC 62 M.UNDARUM, S. CRISIUM																		
L 1	2	29	1.58N	61.42E	35	000	231835		8-19-66	LUNAR ORB LO.F=80MM B&W	-	NONE	231K	2887500	206	7.8	16	-.00
CAM.NAD.= 2.52N 61.89E SWING= 25. PHASE= 70. EMIS.ANG.= 9. CAM.RAD.= 1970.2 KM. SUN AZH= 88.9																		
SOUTHERN PART OF LAC 62 M.UNDARUM, S. CRISIUM & NORTHERN PART OF LAC 80 LANGRENUS, M. FERT.																		
L 1	2	31	2.54N	47.96E	39	000	134659		8-20-66	LUNAR ORB LO.F=80MM B&W	-	NONE	243K	3037500	234	11.0	10	-.00
CAM.NAD.= 3.44N 49.24E SWING= 53. PHASE= 70. EMIS.ANG.= 13. CAM.RAD.= 1982.2 KM. SUN AZH= 88.9																		
SOUTHERN PART OF LAC 61 TARUNTIUS, LYELL & NORTHERN PART OF LAC 79 COLUMBO, NE & LAC 62 M.UNDARUM, S. CRISIUM																		
L 1	2	32	2.15N	49.95E	39	000	134733		8-20-66	LUNAR ORB LO.F=80MM B&W	-	NONE	238K	2975000	227	9.9	12	-.65
CAM.NAD.= 3.08N 50.96E SWING= 46. PHASE= 70. EMIS.ANG.= 11. CAM.RAD.= 1977.2 KM. SUN AZH= 88.9																		
S. E. PART OF LAC 61 TARUNTIUS, LYELL & LAC 62 M.UNDARUM, S. CRISIUM & LAC 79 COLUMBO, NE																		
L 1	2	33	0.77N	56.83E	39	000	134932		8-20-66	LUNAR ORB LO.F=80MM B&W	-	NONE	224K	2800000	189	8.0	18	-.00
CAM.NAD.= 1.80N 57.00E SWING= 7. PHASE= 70. EMIS.ANG.= 9. CAM.RAD.= 1963.2 KM. SUN AZH= 88.7																		
SOUTHERN PART OF LAC 62 M.UNDARUM, S. CRISIUM & NORTHERN PART OF LAC 80 LANGRENUS, M. FERT.																		
L 1	2	34	0.46N	58.30E	39	000	134957		8-20-66	LUNAR ORB LO.F=80MM B&W	-	NONE	222K	2775000	179	8.2	20	-.71
CAM.NAD.= 1.52N 58.29E SWING= 358. PHASE= 70. EMIS.ANG.= 9. CAM.RAD.= 1961.2 KM. SUN AZH= 88.6																		
SOUTHERN PART OF LAC 62 M.UNDARUM, S. CRISIUM & NORTHERN PART OF LAC 80 LANGRENUS, M. FERT.																		

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

SUN	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	L	T	SUN	SIDE.
#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
ROLL	OR	LAT.	LONG.	#	TIMES-HR	M	SEC	(ESTIMATED)		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	FWD.	LAP		
#	#	MAIN								TYPE		M=N.MI	PT.		FR.		VERT		
												K=KM.							
L 4	1	39	14.9US	69.88E	9	00	050052	5-13-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2745K	4500000	135	05 26	-0.45		
		CAM.NAD.= 14.39S	69.36E				SwING= 320.			PHASE= 65.	EMIS.ANG.= 1.	CAM.RAD.=	4484.2 KM.		SUN AZM= 82.2				
		LAC BU LANGRENUS, ;	LAC 81	ANSGARUS, ;			LAC 98	PETAVIUS, H ;		LAC 99	HUMBOLT, GIRBS				6	LAC 62 M.UNDARUM, S.C			
L 4	1	40S	13.28N	70.20E	9	00	053159	5-13-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2740K	4491803	245	09 27	-0.39		
		CAM.NAD.= 13.90N	71.57E				SwING= 59.			PHASE= 61.	EMIS.ANG.= 2.	CAM.RAD.=	4479.2 KM.		SUN AZM= 96.4				
		DEGRADED NEGATIVE						LAC 63	NEPER, SCHUBERT, N. SMYTHI ;		LAC 62 M.UNDARUM, S.CRISIUM				6	LAC 45	PLUTARCH, HAH		
L 4	1	46	14.81S	63.41E	10	00	170137	5-13-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2743K	4496721	122	05 26	-0.39		
		CAM.NAD.= 14.4US	62.75E				SwING= 307.			PHASE= 65.	EMIS.ANG.= 1.	CAM.RAD.=	4482.2 KM.		SUN AZM= 82.3				
		EASTERN PART OF	LAC 80	LANGRENUS, M.FERT.						1	EASTERN PART OF	LAC 98	PETAVIUS, H &		SOUTHERN PART OF	LAC 62	M.UNDARUM, S.		
L 4	1	47S	13.32N	62.36E	10	00	173242	5-13-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2738K	4488525	257	10 25	-0.2		
		CAM.NAD.= 13.88N	64.93E				SwING= 71.			PHASE= 61.	EMIS.ANG.= 4.	CAM.RAD.=	4477.2 KM.		SUN AZM= 95.9				
		CENTRAL PART OF	LAC 62	M.UNDARUM, S.CRISIUM						1	EASTERN PART OF	LAC 44	CLEOMEDES, &		LAC 80	LANGRENUS, M.FERT.			
L 4	2	52	42.9US	63.80E	11	00	043024	5-14-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2976K	3720000	99	04 5 23	-0.0		
		CAM.NAD.= 42.36S	53.33E				SwING= 297.			PHASE= 78.	EMIS.ANG.= 12.	CAM.RAD.=	4715.2 KM.		SUN AZM= 66.0				
		LAC 115	FURNERUS ;				>1/2	MOON SPHERE ;		LUNAR	S. HEMISPHE ;		LAC 140	SCHRODINGER		6	LAC 79	COLOMBO, NE.M.	
L 4	1	53	14.82S	56.82E	11	00	050229	5-14-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2740K	4491803	122	05 25	-0.51		
		CAM.NAD.= 14.41S	56.14E				SwING= 308.			PHASE= 66.	EMIS.ANG.= 1.	CAM.RAD.=	4479.2 KM.		SUN AZM= 82.4				
		WESTERN PART OF	LAC 80	LANGRENUS, M.FERT.						1	WESTERN PART OF	LAC 98	PETAVIUS, H &		S. W. PART OF	LAC 62	M.UNDARUM, S.		
L 4	1	54	13.59N	56.70E	11	00	053333	5-14-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2737K	4486885	259	10 26	-0.36		
		CAM.NAD.= 13.89N	58.29E				SwING= 74.			PHASE= 62.	EMIS.ANG.= 3.	CAM.RAD.=	4476.2 KM.		SUN AZM= 96.2				
		WESTERN PART OF	LAC 62	M.UNDARUM, S.CRISIUM						1	CENTRAL PART OF	LAC 44	CLEOMEDES, &		N. W. PART OF	LAC 80	LANGRENUS, M.		
L 4	2	54S	13.60N	56.69E	11	00	053333	5-14-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2737K	3421250	259	10 26	-0.74		
		CAM.NAD.= 13.89N	58.29E				SwING= 74.			PHASE= 62.	EMIS.ANG.= 3.	CAM.RAD.=	4476.2 KM.		SUN AZM= 96.2				
		DEGRADED NEGATIVE								6	LAC 62	M.UNDARUM, S.CRISIUM							
L 4	2	59S	41.75S	55.05E	12	00	163122	5-14-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2975K	3718750	89	03 6 22	-0.0		
		CAM.NAD.= 42.11S	46.79E				SwING= 287.			PHASE= 78.	EMIS.ANG.= 10.	CAM.RAD.=	4714.2 KM.		SUN AZM= 68.5				
		LAC 114	HEITAJA ;				>1/2	MOON SPHERE ;		LUNAR	E. HEMISPHE ;		LAC 140	SCHRODINGER		6	LAC 62	M.UNDARUM, S.C	
L 4	1	60	13.58S	48.79E	12	00	170326	5-14-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2738K	4488525	319	07 23	-0.51		
		CAM.NAD.= 14.43S	49.54E				SwING= 145.			PHASE= 66.	EMIS.ANG.= 2.	CAM.RAD.=	4477.2 KM.		SUN AZM= 83.6				
		LAC 79	COLUMBO, NE.M.NECTAR					LAC 80	LANGRENUS, M.FERT.		LAC 97	FRACASTORIUS, S.NECTAR		6	LAC 98	PETAVIUS, HOL			
L 4	1	61	14.14N	49.69E	12	00	173428	5-14-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2734K	4481967	278	10 25	-0.49		
		CAM.NAD.= 13.87N	51.63E				SwING= 93.			PHASE= 62.	EMIS.ANG.= 3.	CAM.RAD.=	4473.2 KM.		SUN AZM= 96.2				
		LAC 61	TARUNTIUS, LYELL					LAC 62	M.UNDARUM, S.CRISIUM		LAC 43	MACRORIUS, PROCLUS		6	LAC 44	CLEOMEDES, M.			
L 4	2	78S	13.36N	30.21E	15	00	053813	5-16-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2722K	3402500	248	10 24	-0.76		
		CAM.NAD.= 13.87N	31.68E				SwING= 63.			PHASE= 64.	EMIS.ANG.= 3.	CAM.RAD.=	4461.2 KM.		SUN AZM= 95.4				
		LAC 61	TARUNTIUS, LYELL					>1/2	MOON SPHERE ;		LAC 13	ARISTOTE., ;		LAC 62	M.UNDARUM, S.CRISIUM		6	LAC 113	MAUROLYCU

MIS SION	HAG ROLL	FR, OR	PHOTO LAT.	PRIN. PT.	ORB LAT.	GET TIMES-HR M SEC	GHT (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE, ANG. ANG. FWD. FR. LAP VERT R. R
L 4	2	102	12.96N	3.63E	19 ***	054527	5-18-67	LUNAR	ORB LO.F=80MM B&W	- NONE	2699K	33737500	237	1.1 22 -.15
CAM.NAD.= 13.89N 5.14E SWING= 53. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4438.2 KM. SUN AZM= 94.7														
LAC 57 M.VAPURUM,HYGINUS ; 1/4 MOONS SPHERE ; LAC 58 COPERNICUS,REINHOLD 6 LAC 112 TYCHO,STOFL														
L 4	1	184	35.18S	69.32E	33 ***	013032	5-25-67	LUNAR	ORB HI. 610MM B&W	- NONE	5790K	9491803	259	6.6 7 -.00
CAM.NAD.= 34.03S 97.52E SWING= 269. PHASE= 113. EMIS.ANG.= 30. CAM.RAD.= 7529.2 KM. SUN AZM= 275.8														
LAC 115 FURNERIUS,OKEN ; 1/4 MOONS SPHERE ; LAC 62 M.UNDARUM,S.CRISIUM 6 LAC 63 NEPER,SCHURF														
L 4	1	185	35.27S	69.30E	33 ***	013036	5-25-67	LUNAR	ORB HI. 610MM B&W	- NONE	5790K	9491803	258	6.6 7 -.90
CAM.NAD.= 34.05S 97.52E SWING= 269. PHASE= 113. EMIS.ANG.= 30. CAM.RAD.= 7529.2 KM. SUN AZM= 275.9														
LAC 115 FURNERIUS,OKEN ; 1/4 MOONS SPHERE ; LAC 62 M.UNDARUM,S.CRISIUM 6 LAC 63 NEPER,SCHURF														
L 4	1	191	38.30N	53.79E	33 ***	094706	5-25-67	LUNAR	ORB HI. 610MM B&W	- NONE	5503K	9021311	288	7.7 16 -.00
CAM.NAD.= 33.95N 86.05E SWING= 282. PHASE= 107. EMIS.ANG.= 34. CAM.RAD.= 7242.2 KM. SUN AZM= 257.6														
LAC 27 GEMINUS,AT ; 1/4 MOONS SPHERE ; LAC 4 METON,DESIT ; LAC 5 PETERMANN, HAYN 6 LAC 61 TARUNTIUS,LYE														
L 4	1	192	38.22N	53.84E	33 ***	094709	5-25-67	LUNAR	ORB HI. 610MM B&W	- NONE	5504K	9.22951	288	7.7 16 -.90
CAM.NAD.= 33.93N 86.05E SWING= 282. PHASE= 107. EMIS.ANG.= 34. CAM.RAD.= 7243.2 KM. SUN AZM= 257.7														
LAC 27 GEMINUS,AT ; 1/4 MOONS SPHERE ; LAC 4 METON,DESIT ; LAC 5 PETERMANN, HAYN 6 LAC 61 TARUNTIUS,LYE														
L 5	2	38	0.93S	49.10E	19 ***	094936	8-10-67	LUNAR	ORB LO.F=80MM B&W	- NONE	103K	1287500	269	59.5 16 -.00
CAM.NAD.= .91S 55.52E SWING= 177. PHASE= 8. EMIS.ANG.= 66. CAM.RAD.= 1842.2 KM. SUN AZM= 88.2														
N. E. PART OF LAC 79 COLUMBO,NE ; SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL 6 LAC 62 M.UNDARUM,S.CRISIUM														

TOTAL PHOTOS IN THIS GROUP = 27

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN., B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS PLANAR, BIOGEN, SONAR; FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG #	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. N	ORB	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE	SCALE AT PRIN. M=N.MI K=KM.	T I L T AZ ANG. FR. VERT	SUN SIDE, ANG. ANG. FWD. LAP	
L 1	2	5	1.88N	84.40E	26	***	144250	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	218K	2725000	292	5.4 22	-.00
CAM.NAD.= 1.62N 84.63E SWING= 99. PHASE= 63. EMIS.ANG.= 6. CAM.RAD.= 1957.2 KM. SUN AZM= 89.1																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI																
L 1	2	6	1.75N	84.58E	26	***	144300	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	218K	2725000	293	4.8 22	-.88
CAM.NAD.= 1.52N 85.14E SWING= 100. PHASE= 63. EMIS.ANG.= 5. CAM.RAD.= 1957.2 KM. SUN AZM= 89.1																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI																
L 1	2	7	1.63N	85.16E	26	***	144310	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	217K	2712500	294	4.3 23	-.88
CAM.NAD.= 1.41N 85.65E SWING= 102. PHASE= 63. EMIS.ANG.= 5. CAM.RAD.= 1956.2 KM. SUN AZM= 89.1																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI																
L 1	2	8	1.51N	85.73E	26	***	144320	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	216K	2700000	296	3.8 23	-.88
CAM.NAD.= 1.30N 86.16E SWING= 103. PHASE= 63. EMIS.ANG.= 4. CAM.RAD.= 1955.2 KM. SUN AZM= 89.0																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI																
L 1	2	9	1.38N	86.31E	26	***	144329	8-18-66	LUNAR ORB LO.F=80MM F&N	-	NONE	215K	2687500	298	3.3 24	-.88
CAM.NAD.= 1.19N 86.67E SWING= 106. PHASE= 63. EMIS.ANG.= 4. CAM.RAD.= 1954.2 KM. SUN AZM= 89.0																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI																
L 1	2	10	1.26N	86.88E	26	***	144339	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	215K	2687500	301	2.8 25	-.88
CAM.NAD.= 1.08N 87.18E SWING= 109. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 1954.2 KM. SUN AZM= 88.9																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI																
L 1	2	11	1.14N	87.45E	26	***	144349	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	214K	2675000	305	2.3 25	-.88
CAM.NAD.= .97N 87.68E SWING= 113. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 1953.2 KM. SUN AZM= 88.9																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, 6 S. W. PART OF LAC 64 NE. SMYTHI H																
L 1	2	12	1.01N	88.02E	26	***	144359	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	214K	2675000	312	1.9 26	-.88
CAM.NAD.= .86N 88.19E SWING= 119. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1953.2 KM. SUN AZM= 88.8																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, 6 S. W. PART OF LAC 64 NE. SMYTHI H																
L 1	2	13	0.89N	88.59E	26	***	144409	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	213K	2662500	322	1.4 26	-.88
CAM.NAD.= .75N 88.70E SWING= 130. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1952.2 KM. SUN AZM= 88.8																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, 6 LAC 64 NE. SMYTHI HERTZ																

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. M=NM K=KM.	T I L T AZ ANG.	SUN SIDE, ANG. FWD. FR. LAP VERT 8. 8	
L 1	2	14°	0°77N	89°16E	26	000	0000	144419	8-18-66	LUNAR ORB LO.F=80MM B6W	- NONE	213K	2662500	340	1.1 27	- .88
		CAM.NAD.=		.64N 89.21E		SWING= 148.		PHASE= 63. EMIS.ANG.= 1.		CAM.RAD.=		1952.2 KM.		SUN AZM= 88.7		
		S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 81 ANSGARIUS, 1 LAC 64 NE. SMYTHI 6 LAC 82 SE. M. SMYTHI, PASTEUR														
L 1	2	15°	0°64N	89°73E	26	000	0000	144428	8-18-66	LUNAR ORB LO.F=80MM B6W	- NONE	212K	2650000	8	.9 27	- .88
		CAM.NAD.=		.53N 89.72E		SWING= 176.		PHASE= 63. EMIS.ANG.= 1.		CAM.RAD.=		1951.2 KM.		SUN AZM= 88.7		
		S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 81 ANSGARIUS, 1 LAC 64 NE. SMYTHI 6 LAC 82 SE. M. SMYTHI, PASTEUR														
L 1	2	16°	0°52N	90°30E	26	000	0000	144438	8-18-66	LUNAR ORB LO.F=80MM B6W	- NONE	212K	2650000	38	1.0 28	- .87
		CAM.NAD.=		.42N 90.22E		SWING= 206.		PHASE= 63. EMIS.ANG.= 1.		CAM.RAD.=		1951.2 KM.		SUN AZM= 88.6		
		S. W. PART OF LAC 64 NE. SMYTHI 1 HERTZ ; LAC 81 ANSGARIUS, 1 LAC 63 NEPER, SCHUBERT, N. 6 LAC 82 SE. M. SMYTHI, PAST														
L 1	2	17	0°40N	90°86E	26	000	0000	144448	8-18-66	LUNAR ORB LO.F=80MM B6W	- NONE	211K	2637500	58	1.4 28	- .88
		CAM.NAD.=		.31N 90.72E		SWING= 226.		PHASE= 63. EMIS.ANG.= 1.		CAM.RAD.=		1950.2 KM.		SUN AZM= 88.5		
		S. W. PART OF LAC 64 NE. SMYTHI ; N. W. PART OF LAC 82 SE. M. SMYTHI ; LAC 81 ANSGARIUS, W. M. SMYTHI 6 LAC 63 NEPER, SCHUBERT														
L 1	2	18	0°27N	91°43E	26	000	0000	144458	8-18-66	LUNAR ORB LO.F=80MM B6W	- NONE	211K	2637500	70	1.8 29	- .87
		CAM.NAD.=		.20N 91.23E		SWING= 237.		PHASE= 63. EMIS.ANG.= 2.		CAM.RAD.=		1950.2 KM.		SUN AZM= 88.5		
		S. W. PART OF LAC 64 NE. SMYTHI ; N. W. PART OF LAC 82 SE. M. SMYTHI ; LAC 81 ANSGARIUS, W. M. SMYTHI 6 LAC 63 NEPER, SCHUBERT														
L 1	2	25	1°23N	76°16E	28	000	0000	215625	8-18-66	LUNAR ORB LO.F=80MM B6W	- NONE	227K	2837500	191	9.8 17	- .00
		CAM.NAD.=		2.49N 76.43E		SWING= 9.		PHASE= 70. EMIS.ANG.= 11.		CAM.RAD.=		1966.2 KM.		SUN AZM= 88.8		
		S. W. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. W. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI														
L 1	1	26°	1°62N	71°77E	30	000	0000	051116	8-19-66	LUNAR ORB HI. 610MM B6W	- NONE	228K	373770	201	7.2 17	- .00
		CAM.NAD.=		2.51N 72.13E		SWING= 20.		PHASE= 70. EMIS.ANG.= 8.		CAM.RAD.=		1967.2 KM.		SUN AZM= 88.9		
		S. W. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI														
L 1	2	26	1°02N	71°78E	30	000	0000	051116	8-19-66	LUNAR ORB LO.F=80MM B6W	- NONE	228K	2850000	201	7.2 17	- .00
		CAM.NAD.=		2.51N 72.13E		SWING= 20.		PHASE= 70. EMIS.ANG.= 8.		CAM.RAD.=		1967.2 KM.		SUN AZM= 88.9		
		S. W. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; N. W. PART OF LAC 81 ANSGARIUS, 6 LAC 62 M. UNDAARUM, S. CRISIUM														
L 1	1	27°	1°84N	69°77E	31	000	0000	084845	8-19-66	LUNAR ORB HI. 610MM B6W	- NONE	228K	373770	207	5.7 17	- .00
		CAM.NAD.=		2.50N 70.12E		SWING= 26.		PHASE= 70. EMIS.ANG.= 6.		CAM.RAD.=		1967.2 KM.		SUN AZM= 89.0		
		S. E. PART OF LAC 62 M. UNDAARUM, S. CRISIUM 6 S. W. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI														
L 1	2	27	1°84N	69°77E	31	000	0000	084845	8-19-66	LUNAR ORB LO.F=80MM B6W	- NONE	228K	2850000	207	5.7 17	- .00
		CAM.NAD.=		2.50N 70.12E		SWING= 26.		PHASE= 70. EMIS.ANG.= 6.		CAM.RAD.=		1967.2 KM.		SUN AZM= 89.0		
		S. E. PART OF LAC 62 M. UNDAARUM, S. CRISIUM ; S. W. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 80 LANGRENUS, 6 LAC 81 AN														
L 2	2	196	8°94S	100°54E	97	000	0000	045805	11-25-66	LUNAR ORB LO.F=80MM B6W	- NONE	1519K	18987500	218	.3 20	- .00
		CAM.NAD.=		8.77S 100.68E		SWING= 216.		PHASE= 70. EMIS.ANG.= 1.		CAM.RAD.=		3258.2 KM.		SUN AZM= 272.8		
		LAC 82 SE. M. SMYTHI ; 1/4 MOON SPHERE ; LAC 64 NE. SMYTHI ; LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 LAC 65 GUYOT KING														
L 4	2	9	41°79S	96°20E	6	000	0000	162638	5-11-67	LUNAR ORB LO.F=80MM B6W	- NONE	2989K	37362500	91	4.2 25	- .00
		CAM.NAD.=		42.02S 86.28E		SWING= 289.		PHASE= 76. EMIS.ANG.= 12.		CAM.RAD.=		4728.2 KM.		SUN AZM= 65.1		
		LAC 116 N. AUSTRAL ; 1/2 MOON SPHERE ; LUNAR E. HEMISPHERE ; LAC 140 SCHRUDINGER 6 LAC 63 NEPER, SCHUBERT														

MIS SION	HAG ROLL	FR. ON	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HH M SEC (ESTIMATED)	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	TILT AZ	SUN SIDE, ANG. ANG. FWD. FR. LAP VERT 8, 8
L 4	2	11	41.045	96.20E	6	***	162658	5-11-67	LUNAR	ORB LO.F=80MM B&W	- NONE	2986K	37325000	87	4.3 25 -.90
CAM.NAD.= 41.745 86.32E SWING= 285. PHASE= 76. EMIS.ANG.= 12.															
LAC 116 M.AUSTRAL I >1/2 MOON SPHERE : LUNAR E. HEMISPHE : LAC 140 SCHRÖDINGER															
L 4	2	12	40.675	96.19E	6	***	162708	5-11-67	LUNAR	ORB LO.F=80MM B&W	- NONE	2984K	37300000	86	4.3 25 -.90
CAM.NAD.= 41.615 86.34E SWING= 283. PHASE= 76. EMIS.ANG.= 12.															
LAC 116 M.AUSTRAL I >1/2 MOON SPHERE : LUNAR E. HEMISPHE : LAC 140 SCHRÖDINGER															
L 4	1	17	14.24N	90.44E	6	***	172957	5-11-67	LUNAR	ORB HI. 610MM B&W	- NONE	2739K	4490164	290	.7 29 -.43
CAM.NAD.= 13.89N 91.45E SWING= 104. PHASE= 60. EMIS.ANG.= 2.															
LAC 64 NE.SMYTHI HERTZ : LAC 46 JULIOT MAXWELL : LAC 63 NEPER, SCHUBERT, N. SMYTHI & LAC 45 PLUTARCH, HAH															
L 4	1	18	14.63N	90.47E	6	***	173007	5-11-67	LUNAR	ORB HI. 610MM B&W	- NONE	2740K	4491803	301	.7 28 -.90
CAM.NAD.= 14.04N 91.46E SWING= 116. PHASE= 60. EMIS.ANG.= 2.															
LAC 64 NE.SMYTHI HERTZ : LAC 46 JULIOT MAXWELL : LAC 63 NEPER, SCHUBERT, N. SMYTHI & LAC 45 PLUTARCH, HAH															
L 4	1	20	15.42N	90.54E	6	***	173027	5-11-67	LUNAR	ORB HI. 610MM B&W	- NONE	2741K	4493443	319	.9 28 -.90
CAM.NAD.= 14.34N 91.49E SWING= 134. PHASE= 60. EMIS.ANG.= 2.															
LAC 64 NE.SMYTHI : LAC 46 JULIOT MAXWELL : LAC 63 NEPER, SCHUBERT, N. SMYTHI : LAC 45 PLUTARCH, H & LAC 82 SE.M.SMYTH															
L 4	1	27	15.225	82.67E	7	***	045932	5-12-67	LUNAR	ORB HI. 610MM B&W	- NONE	2747K	4503279	175	.6 26 -.44
CAM.NAD.= 14.355 82.59E SWING= 0. PHASE= 64. EMIS.ANG.= 1.															
CENTRAL PART OF LAC 81 ANSGARIUS, : EASTERN PART OF LAC 99 HUMBOLT, GI : LAC 63 NEPER, SCHUBERT, N.S & LAC 115 FURNERIU, OK															
L 4	1	28	13.34N	81.88E	7	***	053040	5-12-67	LUNAR	ORB HI. 610MM B&W	- NONE	2740K	4491803	258	1.9 26 -.15
CAM.NAD.= 13.94N 84.83E SWING= 73. PHASE= 59. EMIS.ANG.= 5.															
CENTRAL PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI : EASTERN PART OF LAC 45 PLUTARCH, H & LAC 81 ANSGARIUS, W.M.SMYTHI															
L 4	1	34	14.71S	76.59E	8	***	170039	5-12-67	LUNAR	ORB HI. 610MM B&W	- NONE	2746K	4501639	116	.4 26 -.43
CAM.NAD.= 14.41S 75.97E SWING= 302. PHASE= 64. EMIS.ANG.= 1.															
DEGRADED NEGATIVE : LAC 81 ANSGARIUS, W.M.SM : WESTERN PART OF LAC 99 HUMBOLT, GI & SOUTHERN PART OF LAC 63 NEPER, SCHUB															
L 4	1	35	13.63N	76.71E	8	***	173116	5-12-67	LUNAR	ORB HI. 610MM B&W	- NONE	2740K	4491803	260	.9 27 -.35
CAM.NAD.= 13.88N 78.20E SWING= 74. PHASE= 61. EMIS.ANG.= 2.															
DEGRADED NEGATIVE : LAC 63 NEPER, SCHUBERT, N : WESTERN PART OF LAC 45 PLUTARCH, HAH & N. W. PART OF LAC 81 ANSGARIUS, W															
L 4	2	35	13.64N	76.71E	8	***	173117	5-12-67	LUNAR	ORB LO.F=80MM B&W	- NONE	2740K	34250000	260	.9 27 -.76
CAM.NAD.= 13.88N 78.20E SWING= 74. PHASE= 61. EMIS.ANG.= 2.															
DEGRADED NEGATIVE : LAC 63 NEPER, SCHUBERT, N. SMYTHI															
L 4	1	39	14.40S	69.88E	9	***	050052	5-13-67	LUNAR	ORB HI. 610MM B&W	- NONE	2745K	4500000	135	.5 26 -.45
CAM.NAD.= 14.39S 69.36E SWING= 320. PHASE= 65. EMIS.ANG.= 1.															
LAC 80 LANGMENS, : LAC 81 ANSGARIUS, : LAC 98 PETAVIUS, H : LAC 99 HUMBOLT, GI & LAC 62 M.UNDARUM, S.C															
L 4	1	40	13.28N	70.20E	9	***	053159	5-13-67	LUNAR	ORB HI. 610MM B&W	- NONE	2740K	4491803	245	.9 27 -.38
CAM.NAD.= 13.90N 71.57E SWING= 59. PHASE= 61. EMIS.ANG.= 2.															
DEGRADED NEGATIVE : LAC 63 NEPER, SCHUBERT, N. SMYTHI : LAC 62 M.UNDARUM, S. CRISTUM & LAC 45 PLUTARCH, HAH															



MIS SION	MAG ROLL	FR, PHOTO ON LAT.	PRIN, PT. LONG.	ORB "	GET TIMES-HR	GMT M SEC (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE	SCALE AT PRIN. M=N, MI K=KM.	T PT.	L FR.	I V.L.T.	SUN SIDE, ANG. ANG. FWD. LAP R. R
L 4	2	405 13.28N	70.19E	9	***	050159	5-13-67	LUNAR ORB LO, F=80MM B&W	-	NONE	2740K 34250000	245	.9	27	-.78
		CAM. NAD.= 13.90N 71.57E		SWING= 59.		PHASE= 61.		EMIS. ANG.= 2.		CAM. RAD.= 4479.2 KM.		SUN AZM= 96.4			
		DEGAULD NEGATIVE				6 LAC 63 NEPER, SCHUBERT, N. SMYTHI									
L 4	1	165 38.84N	81.13E	29	***	094351	5-23-67	LUNAR ORB HI, 610MM B&W	-	NONE	5487K 89950000	290	7.6	14	-.00
		CAM. NAD.= 33.96N 112.70E		SWING= 282.		PHASE= 109.		EMIS. ANG.= 33.		CAM. RAD.= 7226.2 KM.		SUN AZM= 259.4			
		LAC 28 GAUSS, MESS 1		1/4 MOONS SPHERE		LAC 14 ENDYMION, S		LAC 15 M. HUMBOLDTIANUM		6 LAC 63 NEPER, SCHUBERT					
L 4	1	178 33.87S	82.21E	32	***	132933	5-24-67	LUNAR ORB HI, 610MM B&W	-	NONE	5796K 9501639	264	5.3	2	-.00
		CAM. NAD.= 33.98S 104.14E		SWING= 275.		PHASE= 112.		EMIS. ANG.= 23.		CAM. RAD.= 7535.2 KM.		SUN AZM= 271.9			
		LAC 116 M. AUSTRALIS, JENNER		1/4 MOONS SPHERE		LAC 63 NEPER, SCHUBERT, N. SMYTHI		6 LAC 99 HUMBOLDT, GIBB							
L 4	1	184 35.18S	69.32E	33	***	013032	5-25-67	LUNAR ORB HI, 610MM B&W	-	NONE	5790K 9491803	259	6.6	7	-.00
		CAM. NAD.= 34.03S 97.52E		SWING= 269.		PHASE= 113.		EMIS. ANG.= 30.		CAM. RAD.= 7529.2 KM.		SUN AZM= 275.8			
		LAC 115 FURNERUS, OKEN		1/4 MOONS SPHERE		LAC 62 M. UNDARUM, S. CRISTUM		6 LAC 63 NEPER, SCHUBERT							
L 4	1	185 35.27S	69.30E	33	***	013036	5-25-67	LUNAR ORB HI, 610MM B&W	-	NONE	5790K 9491803	258	6.6	7	-.90
		CAM. NAD.= 34.05S 97.52E		SWING= 269.		PHASE= 113.		EMIS. ANG.= 30.		CAM. RAD.= 7529.2 KM.		SUN AZM= 275.9			
		LAC 115 FURNERUS, OKEN		1/4 MOONS SPHERE		LAC 62 M. UNDARUM, S. CRISTUM		6 LAC 63 NEPER, SCHUBERT							

TOTAL PHOTOS IN THIS GROUP = 38

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-),(+), ( ) , OR(0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
HSE= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
16 = AS EXPOS SPEED = 1/1000 (OR 0 = TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	HAG ROLL	FR. OR	PHOTO LAT.	PRIN. PT.	ORB LUNG.	GET TIMES-HR	GHT M	SEC (=ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.M.I K=KM.	SCALE PRIN. PT.	T AZ	L ANG.	T ANG.	SUN ANG.	SIDE FWD. LAP S. S
L 1	2	11	1.14N	87.45E	26	00	0000	144349	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	214K	2675000	305	2.3	25	-0.88	
CAM.NAD.= .97N 87.68E SWING= 113. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 1953.2 KM. SUN AZM= 88.9																		
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; N. E. PART OF LAC 81 ANSGARIUS, 6 S. W. PART OF LAC 64 NE. SMYTHII H																		
L 1	2	12	1.01N	88.02E	26	00	0000	144359	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	214K	2675000	312	1.9	26	-0.88	
CAM.NAD.= .86N 88.19E SWING= 119. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1953.2 KM. SUN AZM= 88.8																		
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; N. E. PART OF LAC 81 ANSGARIUS, 6 S. W. PART OF LAC 64 NE. SMYTHII H																		
L 1	2	13	0.89N	88.54E	26	00	0000	144409	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	213K	2662500	322	1.4	26	-0.88	
CAM.NAD.= .75N 88.70E SWING= 130. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1952.2 KM. SUN AZM= 88.8																		
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; N. E. PART OF LAC 81 ANSGARIUS, 6 LAC 64 NE. SMYTHII HERTZ																		
L 1	2	14	0.77N	89.16E	26	00	0000	144419	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	213K	2662500	340	1.1	27	-0.88	
CAM.NAD.= .64N 89.21E SWING= 148. PHASE= 63. EMIS.ANG.= 1. CAM.RAD.= 1952.2 KM. SUN AZM= 88.7																		
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 81 ANSGARIUS, ; LAC 64 NE. SMYTHII & LAC 82 SE. M. SMYTHI, PASTEUR																		
L 1	2	15	0.64N	89.73E	26	00	0000	144428	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	212K	2650000	8	.9	27	-0.88	
CAM.NAD.= .53N 89.72E SWING= 176. PHASE= 63. EMIS.ANG.= 1. CAM.RAD.= 1951.2 KM. SUN AZM= 88.7																		
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 81 ANSGARIUS, ; LAC 64 NE. SMYTHII & LAC 82 SE. M. SMYTHI, PASTEUR																		
L 1	2	16	0.52N	90.30E	26	00	0000	144438	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	212K	2650000	38	1.0	28	-0.87	
CAM.NAD.= .42N 90.22E SWING= 206. PHASE= 63. EMIS.ANG.= 1. CAM.RAD.= 1951.2 KM. SUN AZM= 88.6																		
S. N. PART OF LAC 64 NE. SMYTHII HERTZ ; LAC 81 ANSGARIUS, 1 LAC 63 NEPER, SCHUBERT, N & LAC 82 SE. M. SMYTHI, PAST																		
L 1	2	17	0.40N	90.84E	26	00	0000	144448	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	211K	2637500	58	1.4	28	-0.88	
CAM.NAD.= .31N 90.72E SWING= 226. PHASE= 63. EMIS.ANG.= 1. CAM.RAD.= 1950.2 KM. SUN AZM= 88.5																		
S. W. PART OF LAC 64 NE. SMYTHII ; N. W. PART OF LAC 82 SE. M. SMYTHI ; LAC 81 ANSGARIUS, W. M. SMYTHI & LAC 63 NEPER, SCHUBERT																		
L 1	2	18	0.27N	91.43E	26	00	0000	144458	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	211K	2637500	70	1.8	29	-0.87	
CAM.NAD.= .20N 91.23E SWING= 237. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1950.2 KM. SUN AZM= 88.5																		
S. W. PART OF LAC 64 NE. SMYTHII ; N. W. PART OF LAC 82 SE. M. SMYTHI ; LAC 81 ANSGARIUS, W. M. SMYTHI & LAC 63 NEPER, SCHUBERT																		
L 1	2	19	0.15N	92.00E	26	00	0000	144507	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	211K	2637500	77	2.2	30	-0.87	
CAM.NAD.= .09N 91.74E SWING= 245. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 1950.2 KM. SUN AZM= 88.4																		
S. W. PART OF LAC 64 NE. SMYTHII HERTZ ; N. W. PART OF LAC 82 SE. M. SMYTHI & N. E. PART OF LAC 81 ANSGARIUS, W.																		

HIS	HAG	FR	PHOTO	PRIN	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	I	L	T	SUN	SIDE,
SION	ROLL	OR	LAT.	#	TIMES-HH	M	SEC			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FR.	ANG.	FRD.	
#	#	#	MAIN	LONG.	(#-ESTIMATED)					TYPE		M=N-MI	PT.	VERT					LAP	
												K=KM.							%	
L 1	2	20	0.03N	92.57E	26	000	0000	144617	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	211K	2637500	82	2.7	30		-.87	
CAM.NAD.= 0.025 92.24E SWING= 299. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 1950.2 KM. SUN AZH= 88.3																				
S. W. PART OF LAC 64 NE.SMYTHII HERTZ ; N. W. PART OF LAC 82 SE.M.SMYTHI & N. E. PART OF LAC 81 ANSGARIUS, W.																				
L 1	2	21	1.04S	97.54E	26	000	0000	144643	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	210K	2625000	94	7.1	35		-.00	
CAM.NAD.= .975 96.68E SWING= 262. PHASE= 63. EMIS.ANG.= 8. CAM.RAD.= 1949.2 KM. SUN AZH= 87.5																				
NORTHERN PART OF LAC 82 SE.M.SMYTHI, PASTEUR ; SOUTHERN PART OF LAC 44 NE.SMYTHII HERTZ																				
L 1	2	22	1.17S	98.13E	26	000	0000	144653	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	210K	2625000	95	7.7	36		-.87	
CAM.NAD.= 1.095 97.20E SWING= 262. PHASE= 63. EMIS.ANG.= 9. CAM.RAD.= 1949.2 KM. SUN AZH= 87.3																				
NORTHERN PART OF LAC 82 SE.M.SMYTHI, PASTEUR ; SOUTHERN PART OF LAC 44 NE.SMYTHII HERTZ																				
L 1	2	23	1.30S	98.73E	26	000	0000	144703	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	210K	2625000	95	8.2	36		-.87	
CAM.NAD.= 1.20S 97.73E SWING= 263. PHASE= 63. EMIS.ANG.= 9. CAM.RAD.= 1949.2 KM. SUN AZH= 87.2																				
NORTHERN PART OF LAC 82 SE.M.SMYTHI, PASTEUR ; SOUTHERN PART OF LAC 44 NE.SMYTHII HERTZ																				
L 1	2	24	1.42S	99.32E	26	000	0000	144713	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	210K	2625000	95	8.8	37		-.87	
CAM.NAD.= 1.31S 98.26E SWING= 263. PHASE= 63. EMIS.ANG.= 10. CAM.RAD.= 1949.2 KM. SUN AZH= 87.1																				
NORTHERN PART OF LAC 82 SE.M.SMYTHI, PASTEUR ; SOUTHERN PART OF LAC 44 NE.SMYTHII HERTZ																				
L 2	1	196	8.84S	100.56E	97	000	0000	045805	11-25-66	LUNAR ORB HI. 610MM B&W	-	NONE	1519K	2490164	236	.2	20		-.00	
CAM.NAD.= 8.77S 100.68E SWING= 234. PHASE= 70. EMIS.ANG.= 0. CAM.RAD.= 3258.2 KM. SUN AZH= 272.8																				
CENTRAL PART OF LAC 82 SE.M.SMYTHI, PASTEUR ; NORTHERN PART OF LAC 100 CURIE ; SOUTHERN PART OF LAC 64 NE.SMYTHII H																				
L 2	2	196	8.94S	100.54E	97	000	0000	045805	11-25-66	LUNAR ORB LO.F=80MM B&W	-	NONE	1519K	18987500	218	.3	20		-.00	
CAM.NAD.= 8.77S 100.68E SWING= 216. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 3258.2 KM. SUN AZH= 272.8																				
LAC 82 SE.M.SMYTHI ; W1/4 MOONS SPHERE ; LAC 64 NE.SMYTHII ; LAC 63 NEPER, SCHUBERT, N.SMYTHI ; LAC 65 GUYOT KING																				
L 4	1	17	14.24N	90.44E	6	000	0000	172957	5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2739K	4490164	290	.7	29		-.43	
CAM.NAD.= 13.69N 91.45E SWING= 104. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 4478.2 KM. SUN AZH= 97.5																				
LAC 64 NE.SMYTHII HERTZ ; LAC 46 JULIOT MAXWELL ; LAC 63 NEPER, SCHUBERT, N.SMYTHI ; LAC 45 PLUTARCH, MAH																				
L 4	2	17	14.25N	90.44E	6	000	0000	172957	5-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2739K	34237500	290	.7	28		-.84	
CAM.NAD.= 13.89N 91.45E SWING= 104. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 4478.2 KM. SUN AZH= 97.5																				
LAC 64 NE.SMYTHII ; W1/4 MOONS SPHERE ; LAC 115 FURNERUS ; LAC 80 LANGRENIUS, M.FERT. ; LAC 101 TSIOLKOVSKY																				
L 4	1	18	14.63N	90.47E	6	000	0000	173007	5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2740K	4491803	301	.7	28		-.90	
CAM.NAD.= 14.04N 91.46E SWING= 116. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 4479.2 KM. SUN AZH= 97.7																				
LAC 64 NE.SMYTHII HERTZ ; LAC 46 JULIOT MAXWELL ; LAC 63 NEPER, SCHUBERT, N.SMYTHI ; LAC 45 PLUTARCH, MAH																				
L 4	2	195	15.00N	90.51E	6	000	0000	173017	5-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2740K	34250000	312	.8	28		-.3	
CAM.NAD.= 14.19N 91.48E SWING= 126. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 4479.2 KM. SUN AZH= 98.0																				
DEGRADED NEGATIVE ; LAC 64 NE.SMYTHII ; W1/4 MOONS SPHERE ; LAC 81 ANSGARIUS, W.M.SMYTHI ; LAC 129 M.AUSTRAL, L																				
L 4	1	20	15.42N	90.54E	6	000	0000	173027	5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2741K	4493443	319	.9	28		-.90	
CAM.NAD.= 14.34N 91.49E SWING= 134. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 4480.2 KM. SUN AZH= 98.2																				
LAC 64 NE.SMYTHII ; LAC 46 JULIOT MAXWELL ; LAC 63 NEPER, SCHUBERT, N.SMYTHI ; LAC 45 PLUTARCH, MAH ; LAC 82 SE.M.SMYTH																				

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	I	L	T	SUN	SIDE,
SION	KULL	UR	LAT.	#	TIMES-HR	M	SEC			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.			
#	#	MAIN	LONG.	(#-ESTIMATED)						TYPE		M=N.MI	PT.	FR.	LAP					
		#										K=KH		VERT						
L 4	2	21° 42.98N	98.82E	6 ***	180334	5-11-67	LUNAR	ORB	LO.F=80MM	B6W	-	NONE	2979K	37237500	86	1.8	27	-..		
CAM.NAD.= 42.88N 94.55E SWING= 249. PHASE= 67. EMIS.ANG.= 5. CAM.RAD.= 4718.2 K". SUN AZM=117.8																				
LAC 29 BRUNO FABR : W>1/2 MOON SPHERE ; LAC 81 ANSGARIUS. ; LAC 146 N.POLE FAR SIDE;NANSEN,N3 >80N 6 LAC 64 NE.SMYTHII HE																				
L 4	2	53° 14.81S	56.82E	11 ***	050229	5-14-67	LUNAR	ORB	LO.F=80MM	B6W	-	NONE	2740K	34250000	122	.5	25	-.56		
CAM.NAD.= 14.41S 56.14E SWING= 308. PHASE= 66. EMIS.ANG.= 1. CAM.RAD.= 4479.2 K". SUN AZM= 82.4																				
DEGRADED NEGATIVE ; LAC 80 LANGRENUS. ; LAC 44 CLEOMEDES. ; LAC 128 BIELA.WATT 6 LAC 64 NE.SMYTHII HE																				
L 4	3	165 38.84N	81.13E	29 ***	094351	5-23-67	LUNAR	ORB	HI. 610MM	B6W	-	NONE	5487K	89950R2	290	7.6	14	-..		
CAM.NAD.= 33.96N 112.70E SWING= 282. PHASE= 109. EMIS.ANG.= 33. CAM.RAD.= 7226.2 K". SUN AZM=259.4																				
LAC 28 GAUSS,MESS : W1/4 MOONS SPHERE ; LAC 14 ENDYMION,S ; LAC 15 M.HUMBOLTIANUM 6 LAC 63 NEPER,SCHUBER																				

TOTAL PHOTOS IN THIS GROUP = 24

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: . = DEGRADED PHOTOS, \* = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUK= MAUREN; 2P, 2B, 2S = ZEISS LENS(PLANAR, BICOGEN, SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T I L T	SUN SIDE,
SUN	MULL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
#	#	MAIN	LONG.		(#ESTIMATED)			TYPE		M=M.MI	PT.	FR.	LAP
		#								K=KM.		VERT	S, S
L 1	1	136	5.40S 129.33E	77	***	034836	8-26-66	LUNAR ORB HI. 610MM B&W	- NONE	1328K	2177049	359	3.5 21 -..
CAM.NAD.= 8.11S 129.35E SWING= 354. PHASE= 70. EMIS.ANG.= 6. CAM.RAD.= 3067.2 KM. SUN AZM=273.7													
EASTERN PART OF LAC 83 LANGEMAK ; WESTERN PART OF LAC 84 DELLINGER ; LAC 65 GUYOT KING													
L 1	2	136	5.40S 129.33E	77	***	034836	8-26-66	LUNAR ORB LO.F=80MM B&W	- NONE	1328K	16600000	359	3.5 21 -..
CAM.NAD.= 8.11S 129.35E SWING= 354. PHASE= 70. EMIS.ANG.= 6. CAM.RAD.= 3067.2 KM. SUN AZM=273.7													
LAC 83 LANGEMAK ; LAC 84 DELLINGER ; LAC 101 TSIOLKOVSKY ; LAC 102 GAGARIN, E.TSIOLKOVSKY													
L 2	2	146	8.94S 100.54E	97	***	045805	11-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	1519K	18987500	218	.3 20 -..
CAM.NAD.= 8.77S 100.68E SWING= 216. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 3258.2 KM. SUN AZM=272.8													
LAC 82 SE.M.SMYTH ; W1/4 MOONS SPHERE ; LAC 64 NE.SMYTH ; LAC 63 NEPER, SCHUBERT, N.SMYTH													
L 4	2	99*	3.51N 179.92E	18	***	232421	5-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	6142K	76774999	293	2.4 ** -..
CAM.NAD.= .11N 172.38W SWING= 294. PHASE= 115. EMIS.ANG.= 11. CAM.RAD.= 7881.2 KM. SUN AZM=271.5													
LAC 68 SHARONOV ; W>1/2 MOON SPHERE ; LAC 118 JULES VER ; LAC 65 GUYOT KING													

TOTAL PHOTOS IN THIS GROUP = 4

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, \$ = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), (O) = NO INFO \* = APPROXIMATELY NEXT TO MAIN \* = BRACKET MOUNTED; G = CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: S.A. = SUPER WIDE ANGLE LENS; EKTAR = EKTAR 2.8 LENS;  
 HSB = HASSELBLAD; MAUR = MAURER; 2F, 2H, 2S = ZEISS LENS (PLANAR, BIOGEN, SONAR); FOCAL LENGTH (MM) & MAX. F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

L	I	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T I L T	SUN SIDE	SUN	SIDE	FWD
#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
L 1	1	115	2.925	145.25E	69	***	****	000555	8-25-66 LUNAR ORB HI. 610MM B&W	-	NONE	1381K	2263934	10	6.8	19	-.00
CAM. NAD. = 8.275 144.22E SWING = 4. PHASE = 70. EMIS. ANG. = 12. CAM. RAD. = 3120.2 KM. SUN AZM = 272.6																	
EASTERN PART OF LAC 84 DELLINGER 6 S. E. PART OF LAC 44 MENDELEEV																	
L 1	2	115	2.925	145.26E	69	***	****	000555	8-25-66 LUNAR ORB LO. F=80MM B&W	-	NONE	1381K	17262500	10	4.9	19	-.00
CAM. NAD. = 8.275 144.23E SWING = 4. PHASE = 70. EMIS. ANG. = 12. CAM. RAD. = 3120.2 KM. SUN AZM = 272.6																	
LAC 84 DELLINGER ; LAC 66 MENDELEEV ; LAC 48 W. M. MOSCOV ; LAC 85 KEELER 6 LAC 67 SPENCER																	
L 1	2	116	1.145	153.40E	69	***	****	000941	8-25-66 LUNAR ORB LO. F=80MM B&W	-	NONE	1456K	18200000	36	9.3	11	-.90
CAM. NAD. = 7.545 148.62E SWING = 31. PHASE = 70. EMIS. ANG. = 17. CAM. RAD. = 3195.2 KM. SUN AZM = 271.8																	
LAC 67 SPENCER ; LAC 84 DELLINGER ; LAC 85 KEELER ; LAC 86 DAEDALUS 6 LAC 66 MENDELEEV																	
L 1	2	117	5.215	95.31E	71	***	****	071501	8-25-66 LUNAR ORB LO. F=80MM B&W	-	NONE	1581K	19762500	267	32.8	65	-.00
CAM. NAD. = 6.075 152.84E SWING = 265. PHASE = 115. EMIS. ANG. = 90. CAM. RAD. = 3320.2 KM. SUN AZM = 284.7																	
PRIN. PT. IN SPACE ; LUNAR DISC FARSID ; LAC 101 TSIOLKOV5 ; LAC 84 DELLINGER 6 LAC 66 MENDELEEV																	
L 1	1	136	5.405	129.33E	77	***	****	034836	8-26-66 LUNAR ORB HI. 610MM B&W	-	NONE	1328K	2177040	359	3.5	21	-.00
CAM. NAD. = 8.115 129.35E SWING = 354. PHASE = 70. EMIS. ANG. = 6. CAM. RAD. = 3067.2 KM. SUN AZM = 273.7																	
EASTERN PART OF LAC 83 LANGEMAK ; WESTERN PART OF LAC 84 DELLINGER ; LAC 65 GUYOT KING 6 LAC 66 MENDELEEV																	
L 1	2	136	5.405	129.33E	77	***	****	034836	8-26-66 LUNAR ORB LO. F=80MM B&W	-	NONE	1328K	16600000	359	3.5	21	-.00
CAM. NAD. = 8.115 129.35E SWING = 354. PHASE = 70. EMIS. ANG. = 6. CAM. RAD. = 3067.2 KM. SUN AZM = 273.7																	
LAC 83 LANGEMAK ; LAC 84 DELLINGER ; LAC 101 TSIOLKOV5 ; LAC 102 GAGARIN, E. TSIOLKOVSKY 6 LAC 65 GUYOT KING																	
L 4	1	146	2.79N	136.09E	26	***	****	233025	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	6148K	10078688	25	.8	**	-.00
CAM. NAD. = .16N 134.86E SWING = 45. PHASE = 109. EMIS. ANG. = 4. CAM. RAD. = 7887.2 KM. SUN AZM = 271.7																	
LAC 66 MENDELEEV ; 1/4 MOONS SPHERE ; LAC 30 E. SZILARD ; LAC 47 OLCOTT 6 TERMINATOR																	
L 4	2	146	2.79N	136.09E	26	***	****	233025	5-21-67 LUNAR ORB LO. F=80MM B&W	-	NONE	6148K	76849999	25	.8	**	-.00
CAM. NAD. = .16N 134.86E SWING = 45. PHASE = 109. EMIS. ANG. = 4. CAM. RAD. = 7887.2 KM. SUN AZM = 271.7																	
DEGRADED NEGATIVE ; LAC 66 MENDELEEV ; 1/4 MOONS SPHERE ; LAC 136 BAILLEY, KIRCHER 6 LAC 19 CARNOT ROWLAN																	
L 4	1	147	2.09N	136.14E	26	***	****	233057	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	6149K	10080328	31	.7	**	-.90
CAM. NAD. = .00N 134.87E SWING = 51. PHASE = 109. EMIS. ANG. = 3. CAM. RAD. = 7888.2 KM. SUN AZM = 271.4																	
LAC 66 MENDELEEV ; 1/2 MOON SPHERE ; LAC 30 E. SZILARD ; LAC 47 OLCOTT 6 TERMINATOR																	

66

LAC 66 MENDELEEV

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RIS MAG		PR. PHOTO		PRIN. PT.		ORB		GET		GHT		M-DA-YR		CAMERA-LENS OR		FILM-EXPOSURE		ALTI SCALE AT		T I S. T		SUN SIDE,		
SION KULL		OR		LAT.		N		TIMES-HR		M SEC				SENSOR		AND FILTER		TUDE		PRIN.		AZ ANG. ANG. FWD.		
#	#	MAIN		LUNG.		(ESTIMATED)								TYPE				M=N.MI		PT.		FH. LAP		
		H																K=KM.		VERT		R. S		
L 4	2	1475	2.89N	136.14E	26	***	***	233057	5-21-67	LUNAR ORH	LO.F=80MM	B&W							NONE	6149K	76862499	31	*7 **	-90
CAM-RAD.=		.00N 134.87E		SWING= 51.		PHASE= 109.		EMIS.ANG.= 3.		CAM-RAD.=		7888.2 KM.		SUN AZM=271.4		6 > 1/2 MOON SPHERE								
		DEGRADED NEGATIVE																						

TOTAL PHOTOS IN THIS GROUP = 10

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. % = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-),(+),I I, OR(O) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
HSH= HASSELBLAD; MAUR= MAUREN; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MISSION		HAG	FR. PHOTO	PRIN. PT.	URB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTITUDE	SCALE AT	T	L	SUN SIDE	
#	#	OR	LAT.	LONG.	#	TIME-HR	M SEC		SENSOR	AND FILTER		PRIN.	AZ	ANG.	ANG.	
#	#	MAIN				(ESTIMATED)			TYPE		M=N.MI K=KM.	PT.		FR.	FWD. LAP R. S	
L 1	2	115	2.92S	145.26E	69	000	000555	8-25-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1381K	17262500	10	6.8 19
		CAM.NAD.=	8.27S	144.23E	SWING=		4.	PHASE=	70.	EMIS.ANG.=	12.	CAM.RAD.=	3120.2 KM.	SUN	AZM=272.6	
		LAC 84 DELLINGER		LAC 66 MENDELEEV		LAC 48 W.M.MOSCOW		LAC 85 KEELER					6	LAC 67 SPENCER		
L 1	2	116	1.14S	153.40E	69	000	000941	8-25-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1456K	18700000	36	9.3 11
		CAM.NAD.=	7.54S	148.62E	SWING=		31.	PHASE=	70.	EMIS.ANG.=	17.	CAM.RAD.=	3195.2 KM.	SUN	AZM=271.8	
		LAC 67 SPENCER		LAC 84 DELLINGER		LAC 85 KEELER		LAC 86 DAEDALUS					6	LAC 66 MENDELEEV		
L 2	2	33	10.39S	174.07E	55	000	025426	11-19-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1455K	18187500	205	6 20
		CAM.NAD.=	9.92S	174.29E	SWING=		202.	PHASE=	70.	EMIS.ANG.=	1.	CAM.RAD.=	3194.2 KM.	SUN	AZM=273.6	
		LAC 86 DAEDALUS		W1/4 MOONS SPHERE		LAC 67 SPENCER		LAC 69 ENGELHARDT					6	LAC 87 KOROLEV, DOPPL		
L 2	2	34	4.59N	173.51E	56	000	062254	11-19-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1453K	18162500		16.2 19
		CAM.NAD.=	9.94S	172.30E	SWING=		355.	PHASE=	70.	EMIS.ANG.=	31.	CAM.RAD.=	3192.2 KM.	SUN	AZM=268.1	
		LAC 68 SHARUNOV		W1/2 MOON SPHERE		LAC 85 KEELER		LAC 87 KOROLEV, DOPPLER					6	LAC 67 SPENCER		
L 4	1	1235	1.13N	162.38E	22	000	232754	5-19-67	LUNAR	ORB HI. 610MM B&W	-	NONE	6151K	10083607	44	6.4 00
		CAM.NAD.=	00U	161.26E	SWING=		64.	PHASE=	111.	EMIS.ANG.=	2.	CAM.RAD.=	7890.2 KM.	SUN	AZM=271.1	
		DEGRADED NEGATIVE		LAC 67 SPENCER		LAC 31 WIENER		LAC 48 W.M.MOSCOWIENSE								
L 4	2	1236	1.13N	162.38E	22	000	232754	5-19-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	6151K	76887499	44	6.4 00
		CAM.NAD.=	00U	161.26E	SWING=		64.	PHASE=	111.	EMIS.ANG.=	2.	CAM.RAD.=	7890.2 KM.	SUN	AZM=271.1	
		LAC 67 SPENCER		LAC 131 PHANTOL		LAC 6		EARTH'S SPHERE					6	LAC 82 S.F.M.SMYTH, P		

TOTAL PHOTOS IN THIS GROUP = 6



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN:

• = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.

TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS

(-), (.), ( ), OR (O) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND

CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTAR= EKTAR 2.8 LENS;

HSB= HASSELBLAD; MAUR= MAUREL; ZP,ZH,ZS = ZEISS LENS; PLANAR, BIOGEN, SONAR; FOCAL LENGTH(MM) & MAX.F-OPENING

10\* AS EXPOS SPEED = 1/1000 (UN = TWO ZEROS)

FOR LUNAR ORBITER & AFTER ALTITUDE EQUALS KILOMETERS

COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

HIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T	L	T	SUN	SIDE,
SIGN	ROLL	OR	LAT.	"	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	MAIN	LONG.		(ESTIMATED)			TYPE		M=N.MI	PT.	FR.	VERT		LAP	R. S
L 1	2	37	7.98S 157.76W	39	00	0000	145410	8-20-66 LUNAR ORB LO.F=80MM B&W	- NONE	1381K	17262500	72	2.7	15	-90	
CAM.NAD.= 8.63S 159.81W SWING= 68. PHASE= 70. EMIS.ANG.= S. CAM.RAD.= 3120.2 KM. SUN AZM=273.8																
LAC 87 KOROLEV, DO ; LAC 86 DAEDALUS ; LAC 104 AITKEN, OR ; LAC 68 SHARONOV & LAC 69 ENGLEHARDT																
L 1	2	38	7.9JS 157.26W	39	00	0000	145423	8-20-66 LUNAR ORB LO.F=80MM B&W	- NONE	1385K	17317500	73	3.0	15	-90	
CAM.NAD.= 8.59S 159.54W SWING= 68. PHASE= 70. EMIS.ANG.= S. CAM.RAD.= 3124.2 KM. SUN AZM=273.7																
LAC 87 KOROLEV, DO ; LAC 86 DAEDALUS ; LAC 68 SHARONOV ; LAC 104 AITKEN, OR LOV & LAC 105 MOHOROVICIC																
L 1	2	116	1.14S 153.40E	69	00	0000	300941	8-25-66 LUNAR ORB LO.F=80MM B&W	- NONE	1456K	18200000	36	9.3	11	-90	
CAM.NAD.= 7.54S 148.62E SWING= 31. PHASE= 70. EMIS.ANG.= 17. CAM.RAD.= 3195.2 KM. SUN AZM=271.8																
LAC 67 SPENCER ; LAC 84 DELLINGER ; LAC 85 KEELER ; LAC 86 DAEDALUS & LAC 86 MFNOELEEV																
L 2	1	34	4.71N 173.55E	56	00	0000	062254	11-19-66 LUNAR ORB HI. 610MM B&W	- NONE	1453K	2381967	4	16.3	19	-00	
CAM.NAD.= 9.94S 172.29E SWING= 355. PHASE= 70. EMIS.ANG.= 31. CAM.RAD.= 3192.2 KM. SUN AZM=268.1																
WESTERN PART OF LAC 68 SHARONOV ; S. W. PART OF LAC 50 MORSE & N. W. PART OF LAC 86 DAEDALUS																
L 2	2	34	4.59N 173.51E	56	00	0000	062254	11-19-66 LUNAR ORB LO.F=80MM B&W	- NONE	1453K	18162500	4	16.2	19	-00	
CAM.NAD.= 9.94S 172.30E SWING= 355. PHASE= 70. EMIS.ANG.= 31. CAM.RAD.= 3192.2 KM. SUN AZM=268.1																
LAC 68 SHARONOV ; W>1/2 MOON SPHERE ; LAC 85 KEELER ; LAC 87 KOROLEV, DOPLER & LAC 67 SPENCER																
L 4	1	99S	3.51N 179.92E	18	00	0000	232421	5-17-67 LUNAR ORB HI. 610MM B&W	- NONE	6142K	10068852	293	2.4	00	-00	
CAM.NAD.= .11N 172.38E SWING= 294. PHASE= 115. EMIS.ANG.= 11. CAM.RAD.= 7881.2 KM. SUN AZM=271.5																
DEGRADED NEGATIVE ; LAC 68 SHARONOV ; W1/4 MOONS SPHERE ; LAC 32 HUTTON & LAC 49 E.M. MOSCOVIEV																
L 4	2	99S	3.51N 179.92E	18	00	0000	232421	5-17-67 LUNAR ORB LO.F=80MM B&W	- NONE	6142K	76774999	293	2.4	00	-00	
CAM.NAD.= .11N 172.38W SWING= 294. PHASE= 115. EMIS.ANG.= 11. CAM.RAD.= 7881.2 KM. SUN AZM=271.5																
LAC 68 SHARONOV ; W>1/2 MOON SPHERE ; LAC 118 JULES VER ; LAC 65 GUYOT KING & LAC 18 TIKHOV																

TOTAL PHOTOS IN THIS GROUP = 7

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZI) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), (OK) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIUGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR,PHOTO OR	PRIN.PT. LAT.	ORB N	GET TIMES-HR	GHI M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. M=N.M) K=KM.	AT PT.	TILT ANG. FR.	SUN SIDE ANG. VERT	SIDE ANG. LAP	FOOT X. X
L 1	2	28	10.235	153.78W	33	00.000	170521	8-19-66 LUNAR ORB LO.F=80MM B&W	- NONE	1304K	16300000	225	1.6	22	-..	
CAM.NAD.= 9.395 152.92W SWING= 221. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 3043.2 KM. SUN AZM=275.8																
LAC 87 KORULEV,DU ; LAC 69 ENGLEHARDT ; LAC 70 N.W.HERTZS ; LAC 88 S.W.HERTZSPRUNG,PASCHEN & LAC 105 MOHOROVICIC																
L 1	2	30	10.275	162.70W	37	00.000	073501	8-20-66 LUNAR ORB LO.F=80MM B&W	- NONE	1299K	16237500	240	2.3	24	-..	
CAM.NAD.= 9.415 161.18W SWING= 235. PHASE= 70. EMIS.ANG.= 4. CAM.RAD.= 3036.2 KM. SUN AZM=276.2																
LAC 87 KORULEV,DU ; LAC 105 MOHOROVICIC ; LAC 106 MARIOTTE ; LAC 86 DAEDALUS & LAC 88 S.W.HERTZSPRUNG																
L 1	2	35	8.725	162.60W	39	00.000	145201	8-20-66 LUNAR ORB LO.F=80MM B&W	- NONE	1339K	16737500	343	.4	20	-..	
CAM.NAD.= 9.035 162.51W SWING= 338. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 3078.2 KM. SUN AZM=274.8																
LAC 87 KORULEV,DU ; LAC 70 N.W.HERTZS ; LAC 88 S.W.HERTZS ; LAC 106 MARIOTTE & LAC 105 MOHOROVICIC																
L 1	2	37	7.985	157.76W	39	00.000	145410	8-20-66 LUNAR ORB LO.F=80MM B&W	- NONE	1381K	17267500	72	2.7	15	-.90	
CAM.NAD.= 8.635 159.81W SWING= 68. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 3120.2 KM. SUN AZM=273.8																
LAC 87 KORULEV,DU ; LAC 86 DAEDALUS ; LAC 104 AITKEN,OR ; LAC 68 SHARUNOV & LAC 69 ENGLEHARDT																
L 1	1	38	7.905	157.27W	39	00.000	145423	8-20-66 LUNAR ORB HI. 610MM B&W	- NONE	1385K	2770492	73	2.9	15	-.90	
CAM.NAD.= 8.595 159.54W SWING= 68. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 3124.2 KM. SUN AZM=273.7																
EASTERN PART OF LAC 87 KORULEV,DUPPLER ; S. E. PART OF LAC 69 ENGLEHARDT & W. E. PART OF LAC 105 MOHOROVICIC																
L 1	2	38	7.905	157.26W	39	00.000	145423	8-20-66 LUNAR ORB LO.F=80MM B&W	- NONE	1385K	17312500	73	3.0	15	-.90	
CAM.NAD.= 8.595 159.54W SWING= 68. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 3124.2 KM. SUN AZM=273.7																
LAC 87 KORULEV,DU ; LAC 86 DAEDALUS ; LAC 68 SHARUNOV ; LAC 104 AITKEN,ORLOV & LAC 105 MOHOROVICIC																
L 1	2	39	6.495	149.05W	39	00.000	145801	8-20-66 LUNAR ORB LO.F=80MM B&W	- NONE	1451K	18137500	77	7.3	7	-.90	
CAM.NAD.= 7.895 155.17W SWING= 73. PHASE= 70. EMIS.ANG.= 14. CAM.RAD.= 3190.2 KM. SUN AZM=272.3																
LAC 88 S.W.HERTZS ; LAC 87 KORULEV,DU ; LAC 69 ENGLEHARDT ; LAC 70 N.W.HERTZSPRUNG,ARTEM & LAC 105 MOHOROVICIC																
L 1	2	40	6.445	148.73W	39	00.000	145810	8-20-66 LUNAR ORB LO.F=80MM B&W	- NONE	1454K	18175000	77	7.5	6	-.90	
CAM.NAD.= 7.865 155.00W SWING= 73. PHASE= 70. EMIS.ANG.= 14. CAM.RAD.= 3193.2 KM. SUN AZM=272.2																
LAC 88 S.W.HERTZS ; LAC 87 KORULEV,DU ; LAC 69 ENGLEHARDT ; LAC 70 N.W.HERTZSPRUNG,ARTEM & LAC 105 MOHOROVICIC																
L 2	2	33	10.395	174.07E	55	00.000	025426	11-19-66 LUNAR ORB LO.F=80MM B&W	- NONE	1455K	18187500	205	.6	20	-...	
CAM.NAD.= 9.925 174.29E SWING= 202. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 3194.2 KM. SUN AZM=273.6																
LAC 86 DAEDALUS ; W1/4 MOONS SPHERE ; LAC 67 SPENCER ; LAC 69 ENGLEHARDT & LAC 87 KORULEV,DUPPL																

HIS MAG		FR. PHOTO		PRIN. PT. ORB		GET		GHT		M-DA-YR		CAMERA-LENS OR		FILM-EXPOSURE		ALT. SCALE AT		T I L T		SUN SIDE.			
SION ROLL		OR LAT.		#		TIMES-HR		M SEC				SENSOR		AND FILTER		TUDE PRIN.		AZ ANG.		ANG. FWD.			
#	#	MAIN		LONG.		{I=ESTIMATED}						TYPE				M=N.MI K=KM.		PT. FR.		LAP 8. 9			
L 5	1	30	25.79S	139.29W	10	00	000	024335	8-09-67	LUNAR	ORB HI.	610MM	R6W	-	NONE	5969K	8309R16	261	9.6	7	-..		
		CAN-NAD.=		25.33S 104.74W		SWING=		92.		PHASE=		124.		EMIS-ANG.=		41.		CAM-RAD.=		6808.2 KM.		SUN AZH=274.9	
		LAC 106		MARIOTTE		1		1/4 MOONS		SPHERE		LAC 70		N.W.HERTZS		LAC 69		ENGLEHARDT		6		LAC 121 APOLLO	

TOTAL PHOTOS IN THIS GROUP = 10

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+),[ ], OR(U) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

L	I	2	28	10.235	153.78W	33	***	****	170521	8-19-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1304K	16300000	225	1.6	22	-..			
																					TH	PHOTO	PRIN.PT.
			OR	LAT.	#	TIMES-HR	M	SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.				
			MAIN	LUNG.	(ESTIMATED)							TYPE		M=N.MI	PT.	FR.	VERT	LAP					
			#	#	#									K=KM.				%	R				
L	1	2	28	10.235	153.78W	33	***	****	170521	8-19-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1304K	16300000	225	1.6	22	-..			
			CAM.NAD.=	9.395	152.92W	SWING= 221.			PHASE= 70.			EMIS.ANG.= 3.			CAM.RAD.=			3043.2 KM. SUN AZH=275.8					
			LAC 87	KOROLEV,DO	LAC 69	ENGLEHARDT	LAC 70	N.W.HERTZS	LAC 88	S.W.HERTZSPRUNG,PA	SCHEN				6			LAC 105 MOHOROVICIC					
L	1	2	35	8.725	162.60W	39	***	****	145201	8-20-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1339K	16737500	343	.4	20	-..			
			CAM.NAD.=	9.035	162.51W	SWING= 338.			PHASE= 70.			EMIS.ANG.= 1.			CAM.RAD.=			3078.2 KM. SUN AZH=274.8					
			LAC 87	KOROLEV,DO	LAC 70	N.W.HERTZS	LAC 88	S.W.HERTZS	LAC 106	MARIOTTE				6			LAC 105 MOHOROVICIC						
L	1	2	39	6.495	149.05W	39	***	****	145801	8-20-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1451K	18137500	77	7.3	7	-90			
			CAM.NAD.=	7.895	155.17W	SWING= 73.			PHASE= 70.			EMIS.ANG.= 14.			CAM.RAD.=			3190.2 KM. SUN AZH=272.3					
			LAC 88	S.W.HERTZS	LAC 87	KOROLEV,DO	LAC 69	ENGLEHARDT	LAC 70	N.W.HERTZSPRUNG,ARTEM				6			LAC 105 MOHOROVICIC						
L	1	2	40	6.445	148.73W	39	***	****	145810	8-20-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1454K	18175000	77	7.5	6	-90			
			CAM.NAD.=	7.865	155.00W	SWING= 73.			PHASE= 70.			EMIS.ANG.= 14.			CAM.RAD.=			3193.2 KM. SUN AZH=272.2					
			LAC 88	S.W.HERTZS	LAC 87	KOROLEV,DO	LAC 69	ENGLEHARDT	LAC 70	N.W.HERTZSPRUNG,ARTEM				6			LAC 105 MOHOROVICIC						
L	4	2	75	4.29N	145.86W	14	***	****	232104	5-15-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	6127K	76587499	1	1.2	**	-..			
			CAM.NAD.=	.06N	145.96W	SWING= 1.			PHASE= 115.			EMIS.ANG.= 5.			CAM.RAD.=			7866.2 KM. SUN AZH=272.5					
			DEGRADED NEGATIVE						LAC 70 N.W.HERTZSPRUNG,ARTEM						6			Q>1/2 MOON SPHERE					
L	5	1	26	27.655	125.06W	7	***	****	014205	8-08-67	LUNAR	ORB FI. 610MM B&W	-	NONE	5069K	8309A36	258	9.4	5	-..			
			CAM.NAD.=	25.625	90.85W	SWING= 89.			PHASE= 125.			EMIS.ANG.= 40.			CAM.RAD.=			6808.2 KM. SUN AZH=274.4					
			LAC 107	ELLERMAN	W1/4 MOONS SPHERE			LAC 70	N.W.HERTZS	LAC 71	N.E.HERTZSPRUNG,GRIGG				6			LAC 134 ROLTZMANN					
L	5	1	30	25.795	139.29W	10	***	****	024335	8-09-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5069K	8309A36	261	9.6	7	-..			
			CAM.NAD.=	25.335	104.74W	SWING= 92.			PHASE= 124.			EMIS.ANG.= 41.			CAM.RAD.=			6808.2 KM. SUN AZH=274.9					
			LAC 106	MARIOTTE	W1/4 MOONS SPHERE			LAC 70	N.W.HERTZS	LAC 69	ENGLEHARDT				6			LAC 121 APOLLO					
L	5	1	J25	24.81N	130.12W	13	***	****	155741	8-09-67	LUNAR	ORB HI. 610MM B&W	-	NONE	1397K	2290164	280	21.3	1	-..			
			CAM.NAD.=	22.61N	116.73W	SWING= 90.			PHASE= 130.			EMIS.ANG.= 41.			CAM.RAD.=			3136.2 KM. SUN AZH=271.2					
			DEGRADED NEGATIVE						LAC 52			JULIE E.MACH						6			LAC 70 N.W.HERTZSPRUNG,ARTEM		

TOTAL PHOTOS IN THIS GROUP = 8

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. % = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+), ( ), OR(0) = NO INFO ~ = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUHER; ZP,ZH,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

NIS	MAG	FR.PHOTO	PRIN.PT.	ORB	GLT	GHT	M-DA-YR	CAMERA-LENS OR SENSOR	FILM-EXPOSURE AND FILTER	ALTI SCALE AT		T I L T		SUN SIDE,		
										TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	MAIN	LAT.	#	LONG.	TIMES-HR M SEC (?=ESTIMATED)		TYPE			M=N.MI K=KM.	PT.	FR.	LAP	VERT	R, R
L 4	2	513	8.48N	112.11W	10	***	231805	5-13-67 LUNAR ORB LO.F=80MM B&W	-	NONE	6114K	76424999	39	3.2	**	-.90
		CAM.NAD.=	.195	119.45W		SWING=	41.	PHASE= 115. EMIS.ANG.= 14.		CAM.RAD.=	7853.2 KM.		SUN AZM=276.2			
		DEGRADED NEGATIVE														
		6 LAC 71 N.E.HERTZSPRUNG,GRIGG														
L 4	2	1463	2.79N	136.09E	26	***	233025	5-21-67 LUNAR ORB LO.F=80MM B&W	-	NONE	6148K	76849999	25	.8	**	-.**
		CAM.NAD.=	.16N	134.86E		SWING=	45.	PHASE= 109. EMIS.ANG.= 4.		CAM.RAD.=	7887.2 KM.		SUN AZM=271.7			
		DEGRADED NEGATIVE; LAC 66 MENDELEEV; 1/4 MOONS SPHERE; LAC 136 BAILLEY,KIRCHER														
		6 LAC 19 CARNOT ROWLAN														
L 5	1	26	27.65S	125.06W	7	***	014205	8-08-67 LUNAR ORB HI. 610MM B&W	-	NONE	5069K	8309816	258	9.4	5	-.**
		CAM.NAD.=	25.62S	90.85W		SWING=	89.	PHASE= 125. EMIS.ANG.= 40.		CAM.RAD.=	6808.2 KM.		SUN AZM=274.4			
		LAC 107 ELLIKHAN; 1/4 MOONS SPHERE; LAC 70 N.W.HERTZS; LAC 71 N.E.HERTZSPRUNG,GRIGG														
		6 LAC 134 BOLTZMANN														

TOTAL PHOTOS IN THIS GROUP = 3

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-).(.).(.). OR(U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B-BRACKET MOUNTED; G = CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTA 2.8 LENS;  
 HSB = HASSELBLAD; MAUR = MAURER; ZP,ZB,ZS = ZEISS LENS PLANAR, BIOGEN, SONAR; FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

HIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	TILT	SUN	SIDE	
SIUN	KULL	OR	LAT.	N	TIMES-HR	M SEC	(I=ESTIMATED)			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	MAIN	LONG.							TYPE		M=N+MI	PT.		FR.	LAP		
												K=KM.			VERT	R, R		
L 4	2	172	42.93S	67.94W	31	000	0000	050029	5-24-67	LUNAR ORB	LO.F=80MM B6W	-	NONE	3011K	37637500	100	4.8 16	-..
			CAM.NAD.= 41.98S	79.20W				SWING= 297.		PHASE= 86.	EMIS.ANG.= 13.		CAM.RAD.= 4750.2 KM.		SUN AZM= 73.1			
			LAC 109 PIAZZI,V.BOUVARD					I W>1/2 MOON SPHERE					I LAC 144 SCOTT,S.POLF NEARSIDE >6		LAC 72 ELVEY NOBEL			
L 4	2	180	45.83S	75.23W	32	000	0000	170054	5-24-67	LUNAR ORB	LO.F=80MM B6W	-	NONE	3009K	37612500	85	4.6 16	-..
			CAM.NAD.= 41.99S	85.86W				SWING= 283.		PHASE= 87.	EMIS.ANG.= 13.		CAM.RAD.= 4748.2 KM.		SUN AZM= 74.6			
			LAC 109 PIAZZI,V.BOUVARD					I W>1/2 MOON SPHERE					I LAC 144 SCOTT,S.POLF NEARSIDE >6		LAC 72 ELVEY NOBEL			
L 4	2	186	42.26S	81.34W	33	000	0000	050123	5-25-67	LUNAR ORB	LO.F=80MM B6W	-	NONE	3006K	37575000	95	4.7 16	-..
			CAM.NAD.= 41.96S	92.48W				SWING= 293.		PHASE= 87.	EMIS.ANG.= 13.		CAM.RAD.= 4745.2 KM.		SUN AZM= 74.2			
			LAC 109 PIAZZI,V.BOUVARD					I W>1/2 MOON SPHERE					I LAC 144 SCOTT,S.POLF NEARSIDE >6		LAC 72 ELVEY NOBEL			
L 4	1	187	14.97S	89.06W	33	000	0000	053334	5-25-67	LUNAR ORB	HI. 610MM B6W	-	NONE	2723K	4463934	145	.5 14	-.43
			CAM.NAD.= 14.36S	89.48W				SWING= 330.		PHASE= 77.	EMIS.ANG.= 1.		CAM.RAD.= 4462.2 KM.		SUN AZM= 85.4			
			LAC 73 RICCIOLI,NE.ORIENTAL					I LAC 90 LOWELL					I LAC 108 H.ORIENT(SW 1/3 W)		LAC 91 EICHSTADT,SE			
L 4	1	188	13.38N	89.22W	33	000	0000	060409	5-25-67	LUNAR ORB	HI. 610MM B6W	-	NONE	2475K	4385246	255	1.3 15	-.27
			CAM.NAD.= 13.92N	87.19W				SWING= 69.		PHASE= 72.	EMIS.ANG.= 3.		CAM.RAD.= 4414.2 KM.		SUN AZM= 92.7			
			LAC 55 VASCOLEGAN					I LAC 72 ELVEY NOBEL					I LAC 37 STRUVE,DAL		LAC 54 BELB LAUE			
L 4	1	195	14.91S	94.40W	34	000	0000	173356	5-25-67	LUNAR ORB	HI. 610MM B6W	-	NONE	2721K	4460656	109	1.0 15	-.48
			CAM.NAD.= 14.40S	96.11W				SWING= 294.		PHASE= 78.	EMIS.ANG.= 3.		CAM.RAD.= 4460.2 KM.		SUN AZM= 85.2			
			EASTERN PART OF LAC 90 LOWELL										I LAC 108 H.ORIENTIS		LAC 91 EICHSTADT,SE.ORIENTAL			
L 4	1	196	12.86N	94.86W	34	000	0000	180431	5-25-67	LUNAR ORB	HI. 610MM B6W	-	NONE	2475K	4385246	224	.9 15	-.25
			CAM.NAD.= 13.88N	93.82W				SWING= 38.		PHASE= 73.	EMIS.ANG.= 2.		CAM.RAD.= 4414.2 KM.		SUN AZM= 92.7			
			EASTERN PART OF LAC 72 ELVEY NOBEL										I LAC 54 BELB LAUE		LAC 90 LOWELL			
L 5	1	13	14.32N	102.40W	2	000	0000	133325	8-06-67	LUNAR ORB	HI. 610MM B6W	-	NONE	5755K	9434426	279	7.6 3	-..
			CAM.NAD.= 11.15N	74.61W				SWING= 92.		PHASE= 122.	EMIS.ANG.= 35.		CAM.RAD.= 7494.2 KM.		SUN AZM= 270.8			
			LAC 72 ELVEY NOBEL					I W1/4 MOONS SPHERE					I LAC 20 COULONB		LAC 35 LANDAU			
L 5	2	13	14.79N	102.29W	2	000	0000	133325	8-06-67	LUNAR ORB	LO.F=80MM B6W	-	NONE	5755K	71937499	280	7.6 3	-..
			CAM.NAD.= 11.15N	74.61W				SWING= 94.		PHASE= 122.	EMIS.ANG.= 35.		CAM.RAD.= 7494.2 KM.		SUN AZM= 270.8			
			LAC 72 ELVEY NOBEL					I LUNAR DISC FAR SID					I LUNAR W. HEMISPHE		LAC 6			
													I LIMB OR HORIZON					

MIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB LONG.	GET TIMES=HR M SEC (ESTIMATED)	GMT H SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.M1 K=KM.	SCALE AT PRIN. PT.	T I L I AZ	SUN SIDE, ANG. FR. VERT	ANG. FR.	FWD. LAP 8. 8
L 5	1	14	14.27N	102.39W	2 00 0000	133328	8-06-67	LUNAR ORB HI. 610MM B&W	- NONE	5756K	9436046	279	7.6 3	-90	
CAM.NAD.= 11.14N 74.61W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7495.2 KM. SUN AZM=270.8															
LAC 72 ELVEY NOBEL ; W1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU 6 LAC 123 STEKLOV															
L 5	2	14	14.75N	102.28W	2 00 0000	133328	8-06-67	LUNAR ORB LO.F=80MM B&W	- NONE	5756K	71949999	280	7.6 3	-90	
CAM.NAD.= 11.14N 74.61W SWING= 93. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7495.2 KM. SUN AZM=270.8															
LAC 72 ELVEY NOBEL ; LUNAR DISC FARSID ; LUNAR W. HEMISPHE 6 LIMB OR HORIZON															
L 5	1	15	14.23N	102.38W	2 00 0000	133330	8-06-67	LUNAR ORB HI. 610MM B&W	- NONE	5756K	9436066	279	7.6 3	-90	
CAM.NAD.= 11.13N 74.61W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7495.2 KM. SUN AZM=270.8															
LAC 72 ELVEY NOBEL ; W1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU 6 LAC 123 STEKLOV															
L 5	2	15	14.70N	102.27W	2 00 0000	133331	8-06-67	LUNAR ORB LO.F=80MM B&W	- NONE	5756K	71949999	280	7.6 3	-90	
CAM.NAD.= 11.13N 74.60W SWING= 93. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7495.2 KM. SUN AZM=270.8															
LAC 72 ELVEY NOBEL ; LUNAR DISC FARSID ; LUNAR W. HEMISPHE 6 LIMB OR HORIZON															
L 5	1	16	14.18N	102.37W	2 00 0000	133333	8-06-67	LUNAR ORB HI. 610MM B&W	- NONE	5757K	9437705	279	7.6 3	-90	
CAM.NAD.= 11.12N 74.60W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7496.2 KM. SUN AZM=270.8															
LAC 72 ELVEY NOBEL ; W1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU 6 LAC 123 STEKLOV															
L 5	2	16	14.66N	102.26W	2 00 0000	133333	8-06-67	LUNAR ORB LO.F=80MM B&W	- NONE	5757K	71962499	280	7.6 3	-90	
CAM.NAD.= 11.12N 74.60W SWING= 93. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7496.2 KM. SUN AZM=270.9															
LAC 72 ELVEY NOBEL ; LUNAR DISC FARSID ; LUNAR W. HEMISPHE 6 LIMB OR HORIZON															
L 5	1	17	14.13N	102.36W	2 00 0000	133336	8-06-67	LUNAR ORB HI. 610MM B&W	- NONE	5757K	9437705	279	7.6 3	-90	
CAM.NAD.= 11.11N 74.60W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7496.2 KM. SUN AZM=270.9															
LAC 72 ELVEY NOBEL ; W1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU 6 LAC 123 STEKLOV															
L 5	2	17	14.61N	102.25W	2 00 0000	133336	8-06-67	LUNAR ORB LO.F=80MM B&W	- NONE	5757K	71962499	280	7.6 3	-90	
CAM.NAD.= 11.11N 74.60W SWING= 93. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7496.2 KM. SUN AZM=270.9															
LAC 72 ELVEY NOBEL ; LUNAR DISC FARSID ; LUNAR W. HEMISPHE 6 LIMB OR HORIZON															
L 5	1	18	14.09N	102.35W	2 00 0000	133338	8-06-67	LUNAR ORB HI. 610MM B&W	- NONE	5758K	9439344	279	7.6 3	-90	
CAM.NAD.= 11.10N 74.60W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7497.2 KM. SUN AZM=270.9															
LAC 72 ELVEY NOBEL ; W1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU 6 LAC 123 STEKLOV															
L 5	2	18	14.57N	102.23W	2 00 0000	133339	8-06-67	LUNAR ORB LO.F=80MM B&W	- NONE	5758K	71974999	280	7.6 3	-90	
CAM.NAD.= 11.10N 74.60W SWING= 93. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7497.2 KM. SUN AZM=270.9															
LAC 72 ELVEY NOBEL ; LUNAR DISC FARSID ; LUNAR W. HEMISPHE 6 LIMB OR HORIZON															
L 5	1	19	14.64N	102.34W	2 00 0000	133341	8-06-67	LUNAR ORB HI. 610MM B&W	- NONE	5758K	9439344	279	7.6 3	-90	
CAM.NAD.= 11.09N 74.60W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7497.2 KM. SUN AZM=270.9															
LAC 72 ELVEY NOBEL ; W1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU 6 LAC 123 STEKLOV															
L 5	2	19	14.52N	102.22W	2 00 0000	133341	8-06-67	LUNAR ORB LO.F=80MM B&W	- NONE	5758K	71974999	280	7.6 3	-90	
CAM.NAD.= 11.09N 74.60W SWING= 93. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7497.2 KM. SUN AZM=270.9															
LAC 72 ELVEY NOBEL ; LUNAR DISC FARSID ; LUNAR W. HEMISPHE 6 LIMB OR HORIZON															

HIS MAG FR. PHOTO PRIN. PT. ORB		GET	GMT	N-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT T I L T SUN SIDE.					
SION ROLL	OR LAT.	#	TIMES-HR M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
#	#	MAIN	LONG.	(ESTIMATED)	TYPE		M=N.MI	PT.	FR.	LAP		
		#					K=KM.		VERT			
L 5 1	20 14.00N 102.33W	2	000 0000	133344	8-06-67 LUNAR ORB HI. 610MM B&W	-	NONE	5758K	9439344	279	7.6	3
	CAM-NAD.= 11.08N 74.60W		SWING= 92.	PHASE= 122.	EMIS-ANG.= 35.							-0.90
	LAC 72 ELVEY NOBEL :		W1/4 HUONS SPHERE :	LAC 20 COULOMB	: LAC 35 LANDAU							
L 5 2	20 14.48N 102.21W	2	000 0000	133344	8-06-67 LUNAR ORB LO.F=80MM B&W	-	NONE	5758K	71974999	280	7.6	3
	CAM-NAD.= 11.08N 74.60W		SWING= 93.	PHASE= 122.	EMIS-ANG.= 35.							-0.90
	LAC 72 ELVEY NOBEL :		LUNAR DISC FAR SID :	LUNAR W. HEMISPHE	& LIMB OR HORIZON							

TOTAL PHOTOS IN THIS GROUP = 23



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G, CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. PT.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN.	TILT		SUN SIDE	
													FR.	VERT	ANG.	ANG.
L 4	2	255	3.025	78.13W	6	***	***	231342	5-11-67 LUNAR ORB LO.F=80MM B&W	-	NONE	6110K 76374999	101	4.2	**	-.**
CAM.NAD.= .115 92.94W SWING= 101. PHASE= 115. EMIS.ANG.= 19. CAM.RAD.= 7849.2 KM. SUN AZH=267.6																
DEGRADED NEGATIVE & LAC 73 RICCIOLI, NE. ORIENTAL																
L 4	2	158	42.00N	47.66W	28	***	***	183333	5-22-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2866K 35825000	106	1.7	20	-.**
CAM.NAD.= 42.85N 51.22W SWING= 271. PHASE= 75. EMIS.ANG.= 4. CAM.RAD.= 4405.2 KM. SUN AZH=107.7																
LAC 23 RUMKER, SHARP ; >1/2 MOON SPHERE ; LAC 73 RICCIOLI, NE. ORIENTAL & LAC 1 N. POLE NEARS!																
L 4	2	163	41.22N	53.38W	29	***	***	063426	5-23-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2867K 35837500	115	2.2	20	-.**
CAM.NAD.= 42.87N 57.71W SWING= 279. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4406.2 KM. SUN AZH=107.7																
LAC 23 RUMKER, SHARP ; >1/2 MOON SPHERE ; LAC 73 RICCIOLI, NE. ORIENTAL & LAC 1 N. POLE NEARS!																
L 4	2	166	71.31S	60.23W	30	***	***	161844	5-23-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3593K 44912500	101	3.4	7	-.**
CAM.NAD.= 71.19S 82.44W SWING= 264. PHASE= 93. EMIS.ANG.= 10. CAM.RAD.= 5332.2 KM. SUN AZH= 86.4																
LAC 136 BAILLEY, K ; >1/2 MOON SPHERE ; LAC 129 M. AUSTRAL ; LAC 73 RICCIOLI, NE. ORIENTAL & LAC 93 H. HUMOR, GASS																
L 4	1	168	14.45S	68.18W	30	***	***	173229	5-23-67 LUNAR ORB HI. 610MM B&W	-	NONE	2722K 4462295	103	.9	17	-.47
CAM.NAD.= 14.14S 69.56W SWING= 288. PHASE= 76. EMIS.ANG.= 2. CAM.RAD.= 4461.2 KM. SUN AZH= 84.9																
LAC 74 GRIMALDI, BILLY ; LAC 73 RICCIOLI, NE. ORIENTAL ; LAC 91 EICHSTADT, SE. ORIENTAL & LAC 92 BYRGIVUS, DARA																
L 4	1	169	13.69N	68.49W	30	***	***	180302	5-23-67 LUNAR ORB HI. 610MM B&W	-	NONE	2672K 4380328	248	.8	17	-.26
CAM.NAD.= 14.14N 67.33W SWING= 62. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 4411.2 KM. SUN AZH= 93.5																
LAC 56 HEVELIUS, R ; LAC 55 VASCODEGAM ; LAC 38 SELEUCUS, S ; LAC 37 STRUVE, DALTON & LAC 74 GRIMALDI, BILL																
L 4	2	170	41.78N	59.60W	30	***	***	183518	5-23-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2871K 35887500	108	2.2	20	-.19
CAM.NAD.= 43.00N 64.22W SWING= 271. PHASE= 76. EMIS.ANG.= 6. CAM.RAD.= 4410.2 KM. SUN AZH=107.7																
LAC 23 RUMKER, SHARP ; >1/2 MOON SPHERE ; LAC 73 RICCIOLI, NE. ORIENTAL & LAC 6																
L 4	1	173	14.77S	75.41W	31	***	***	053243	5-24-67 LUNAR ORB HI. 610MM B&W	-	NONE	2724K 4465574	116	.6	15	-.48
CAM.NAD.= 14.37S 76.23W SWING= 301. PHASE= 76. EMIS.ANG.= 1. CAM.RAD.= 4463.2 KM. SUN AZH= 85.1																
EASTERN PART OF LAC 73 RICCIOLI, NE. ORIENTAL ; EASTERN PART OF LAC 91 EICHSTADT, SE. ORIENTAL ; LAC 55 VASCODEGAM & LAC 92 BY																
L 4	2	173	14.76S	75.41W	31	***	***	053243	5-24-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2724K 34050000	116	.6	15	-.7
CAM.NAD.= 14.37S 76.23W SWING= 301. PHASE= 76. EMIS.ANG.= 1. CAM.RAD.= 4463.2 KM. SUN AZH= 85.1																
LAC 73 RICCIOLI, NE. ORIENTAL ; >1/2 MOON SPHERE ; LAC 193 S. HAUSEN LEGENTIL & LAC 36 RONTGEN LORE																

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THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEANS: \* = DEGRADED PHOTOS. \$ = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), ON(U) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: S.A. = SUPER WIDE ANGLE LENS; EKTH=EKTA 2.8 LENS;  
 MSB= HASSELBLAD; MAUR= MAURER; ZP,ZH,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (ON \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T I L T	SUN SIDE,
SINUS	ROLL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
#	#	MAIN	LONG.		(ESTIMATED)			TYPE		M=N.MI	PT.	FR.	LAP
										K=KM.		VERT	S, S
L 3	1	172	2.425	44.07W	88	***	185813	2-21-67 LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	255	66.6 13 -...
			CAM.NAD.= 1.29S	39.85W			SWING= 21.	PHASE= 16.	EMIS.ANG.= 71.	CAM.RAD.= 1791.2 KM.		SUN AZM= 90.9	
			N. N. PART OF	LAC 75 LETHONNE, FLAMSTO				6	N. E. PART OF	LAC 74 GRIMALDI, BILLY			
L 3	2	172	2.415	44.06W	88	***	185813	2-21-67 LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	255	66.5 13 -...
			CAM.NAD.= 1.30S	39.84W			SWING= 21.	PHASE= 16.	EMIS.ANG.= 71.	CAM.RAD.= 1791.2 KM.		SUN AZM= 90.9	
			N. N. PART OF	LAC 75 LETHONNE, FLAMSTO				6	N. E. PART OF	LAC 74 GRIMALDI, BILLY			
L 3	1	213	3.33S	59.78W	94	***	154656	2-22-67 LUNAR ORB HI. 610MM B&W	- NONE	59K	96721	200	66.5 8 -...
			CAM.NAD.= 1.31N	58.00W			SWING= 2.	PHASE= 69.	EMIS.ANG.= 71.	CAM.RAD.= 1798.2 KM.		SUN AZM= 91.0	
			NORTHERN PART OF	LAC 74 GRIMALDI, BILLY				6	LIMB OR HORIZON				
L 3	2	213	3.32S	59.77W	94	***	154657	2-22-67 LUNAR ORB LO.F=80MM B&W	- NONE	59K	737500	201	66.4 8 -...
			CAM.NAD.= 1.31N	59.99W			SWING= 2.	PHASE= 69.	EMIS.ANG.= 71.	CAM.RAD.= 1798.2 KM.		SUN AZM= 91.0	
			NORTHERN PART OF	LAC 74 GRIMALDI, BILLY				6	LIMB OR HORIZON				
L 4	2	139	42.17N	28.25W	25	***	062940	5-21-67 LUNAR ORB LO.F=80MM B&W	- NONE	2872K	35900000	102	1.6 20 -1.24
			CAM.NAD.= 42.82N	31.79W			SWING= 267.	PHASE= 74.	EMIS.ANG.= 4.	CAM.RAD.= 4811.2 KM.		SUN AZM= 108.6	
			LAC 24 SINUS INID :	>1/2 MOON SPHERE :	LAC 74 GRIMALDI, B :			LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N	6	LAC 14 ENDYMION, STRA			
L 4	2	145	42.34N	33.70W	26	***	183109	5-21-67 LUNAR ORB LO.F=80MM B&W	- NONE	2868K	35850000	96	2.1 21 -...
			CAM.NAD.= 42.82N	38.27W			SWING= 260.	PHASE= 75.	EMIS.ANG.= 5.	CAM.RAD.= 4607.2 KM.		SUN AZM= 109.1	
			LAC 24 SINUS INID :	>1/2 MOON SPHERE :	LAC 74 GRIMALDI, B :			LAC 5 PETERHANN, HAYN	6	LAC 14 ENDYMION, STRA			
L 4	1	149	15.05S	48.76W	27	***	052940	5-22-67 LUNAR ORB HI. 610MM B&W	- NONE	2720K	4459016	127	.7 18 -1.49
			CAM.NAD.= 14.40S	49.64W			SWING= 313.	PHASE= 74.	EMIS.ANG.= 2.	CAM.RAD.= 4459.2 KM.		SUN AZM= 84.4	
			LAC 75 LETHONNE, F :	LAC 74 GRIMALDI, B :	LAC 92 BYRGIOUS, DA :			LAC 93 M. HUMOR, GASSENDI	6	LAC 56 HEVELIUS, REIN			
L 4	1	150	12.70N	49.29W	27	***	060012	5-22-67 LUNAR ORB HI. 610MM B&W	- NONE	2668K	4373770	234	1.3 18 -1.23
			CAM.NAD.= 13.91N	47.59W			SWING= 48.	PHASE= 70.	EMIS.ANG.= 3.	CAM.RAD.= 4407.2 KM.		SUN AZM= 93.5	
			LAC 57 KEPLER, ENC :	LAC 56 HEVELIUS, R :	LAC 39 ARISTARCHU :			LAC 38 SELEUCUS, SCHROTER V.	6	LAC 75 LETHONNE, FLAM			
L 4	2	151	40.88N	40.20W	27	***	063228	5-22-67 LUNAR ORB LO.F=80MM B&W	- NONE	2866K	35825000	118	2.4 21 -...
			CAM.NAD.= 42.84N	44.74W			SWING= 282.	PHASE= 75.	EMIS.ANG.= 6.	CAM.RAD.= 4605.2 KM.		SUN AZM= 108.3	
			LAC 23 KUMKER, SHA :	>1/2 MOON SPHERE :	LAC 74 GRIMALDI, H :			LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N	6	LAC 13 ARISTOTE., M. F			

MIS SION	MAG NULL	FR. PHOTO OR	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR M SEC (ESTIMATED)	GHT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE	SCALE AT PRIN. PT. M=N.M1 K=KM.	T I L T AZ ANG. FR. VERT	SUN SIDE ANG. ANG. FND. LAP S. S
L 4	2	154	71.70S	33.52W	28 00 00	161555	5-22-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3413K 95162500	105	5.2 11 -00
CAM.NAD.= 72.07S 69.24W SWING= 268. PHASE= 94. EMIS.ANG.= 16. CAM.RAD.= 5352.2 KM. SUN AZM= 52.2												
LAC 137 HENTON, HO ; W1/4 MOON SPHERE ; LAC 129 M.AUSTRAL ; LAC 74 GRIMALDI, BILLY ; LAC 93 M.HUMOR, GASS												
L 4	1	156	14.88S	55.80W	28 00 00	173043	5-22-67 LUNAR ORB HI, 610MM B&W	-	NONE	2722K 4462295	136	0.4 17 -0.49
CAM.NAD.= 14.39S 56.29W SWING= 321. PHASE= 74. EMIS.ANG.= 1. CAM.RAD.= 4461.2 KM. SUN AZM= 84.7												
EASTERN PART OF LAC 74 GRIMALDI, B ; EASTERN PART OF LAC 92 BYRGIUS, DA ; LAC 56 HEVELIUS, REINER ; LAC 93 M.HUMOR, GASS												
L 4	2	156	14.87S	55.80W	28 00 00	173043	5-22-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2722K 34025000	135	0.4 17 -00
CAM.NAD.= 14.39S 56.29W SWING= 321. PHASE= 74. EMIS.ANG.= 1. CAM.RAD.= 4461.2 KM. SUN AZM= 84.7												
LAC 74 GRIMALDI, B ; W1/2 MOON SPHERE ; LAC 136 BAILLEY, K ; LAC 22 SE.GERARD, BUNSEN, HARDING ; LAC 40 TIMOCHARIS, LA												
L 4	1	157	13.36N	56.27W	28 00 00	180116	5-22-67 LUNAR ORB HI, 610MM B&W	-	NONE	2669K 4375410	255	1.4 17 -0.28
CAM.NAD.= 13.91N 54.17W SWING= 69. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 4408.2 KM. SUN AZM= 93.4												
EASTERN PART OF LAC 56 HEVELIUS, REINER ; EASTERN PART OF LAC 38 SELEUCUS, S & NORTHERN PART OF LAC 74 GRIMALDI, BIL												
L 4	1	161	15.13S	61.98W	29 00 00	053134	5-23-67 LUNAR ORB HI, 610MM B&W	-	NONE	2723K 4463934	129	0.8 17 -0.48
CAM.NAD.= 14.36S 62.94W SWING= 315. PHASE= 75. EMIS.ANG.= 2. CAM.RAD.= 4462.2 KM. SUN AZM= 84.7												
CENTRAL PART OF LAC 74 GRIMALDI, B ; CENTRAL PART OF LAC 92 BYRGIUS, DA ; LAC 56 HEVELIUS, REINER ; LAC 109 PIAZZI, V. ROU												
L 4	2	161	15.13S	61.98W	29 00 00	053134	5-23-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2723K 34037500	129	0.8 17 -0.88
CAM.NAD.= 14.36S 62.94W SWING= 315. PHASE= 75. EMIS.ANG.= 2. CAM.RAD.= 4462.2 KM. SUN AZM= 84.7												
LAC 74 GRIMALDI, B ; W1/2 MOON SPHERE ; LAC 136 BAILLEY, K ; LAC 22 SE.GERARD, BUNSEN, HARDING ; LAC 58 COPERNICUS, RE												
L 4	1	162	13.22N	62.17W	29 00 00	060208	5-23-67 LUNAR ORB HI, 610MM B&W	-	NONE	2670K 4377049	243	1.0 17 -0.30
CAM.NAD.= 13.93N 60.75W SWING= 57. PHASE= 71. EMIS.ANG.= 3. CAM.RAD.= 4409.2 KM. SUN AZM= 93.4												
WESTERN PART OF LAC 56 HEVELIUS, REINER ; CENTRAL PART OF LAC 38 SELEUCUS, S & N. W. PART OF LAC 74 GRIMALDI, BIL												
L 4	1	168	14.45S	68.18W	30 00 00	173229	5-23-67 LUNAR ORB HI, 610MM B&W	-	NONE	2722K 4462295	103	0.9 17 -0.47
CAM.NAD.= 14.14S 69.56W SWING= 288. PHASE= 76. EMIS.ANG.= 2. CAM.RAD.= 4461.2 KM. SUN AZM= 84.9												
LAC 74 GRIMALDI, BILLY ; LAC 73 RICCIOLI, NE. ORIENTAL ; LAC 91 EICHSTADT, SE. ORIENTAL ; LAC 92 BYRGIUS, DARN												
L 4	2	168	14.44S	68.18W	30 00 00	173229	5-23-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2722K 34025000	103	0.9 17 -00
CAM.NAD.= 14.14S 69.56W SWING= 288. PHASE= 76. EMIS.ANG.= 2. CAM.RAD.= 4461.2 KM. SUN AZM= 84.9												
LAC 74 GRIMALDI, B ; W1/2 MOON SPHERE ; LAC 124 PHOUCY, LIDE ; LAC 22 SE.GERARD, BUNSEN, HARDING ; LAC 57 KEPLER, ENCKE												
L 4	1	169	13.69N	68.49W	30 00 00	180302	5-23-67 LUNAR ORB HI, 610MM B&W	-	NONE	2672K 4380320	248	0.6 17 -0.26
CAM.NAD.= 14.14N 67.33W SWING= 62. PHASE= 71. EMIS.ANG.= 2. CAM.RAD.= 4411.2 KM. SUN AZM= 93.5												
LAC 56 HEVELIUS, R ; LAC 55 VASCOUEGAH ; LAC 38 SELEUCUS, S ; LAC 37 STRUVE, DALTON ; LAC 74 GRIMALDI, BIL												
L 4	2	189	41.72N	79.99W	33 00 00	063636	5-25-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2878K 35975000	110	1.9 18 -00
CAM.NAD.= 42.88N 84.00W SWING= 273. PHASE= 77. EMIS.ANG.= 5. CAM.RAD.= 4617.2 KM. SUN AZM= 106.1												
LAC 22 SE.GERARD, BUNSEN, HARDING ; W1/2 MOON SPHERE ; LAC 108 M. ORIENT, SW 1/3 Q1 ; LAC 1 N. POLE NEARS I												
L 4	2	193	63.88S	85.98W	34 00 00	162428	5-25-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3519K 43987500	70	4.8 9 -00
CAM.NAD.= 68.87S 107.44W SWING= 232. PHASE= 95. EMIS.ANG.= 15. CAM.RAD.= 5258.2 KM. SUN AZM= 68.6												
LAC 135 PINGRE, N. HAUSEN ; W1/2 MOON SPHERE ; LAC 139 HELMHOLTZ ; LAC 90 LOWELL ; LAC 74 GRIMA ; LAC 127 HOMM												

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LAC 74 GRIMALDI, BILLY

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MIS NAG FR, PHOTO PRIN. PT. ORB		GET	GHT	H-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT] SCALE AT	T I L T	SUN SIDE,
SION ROLL	OR LAT.	#	TIMES-HH M SEC		SENSOR	AND FILTER	TUDE PRIN.	AZ	ANG. ANG. FWD.
#	#	MAIN	LUNG.	(ESTIMATED)	TYPE		M=N.MI PT.	FR.	LAP
		#					K*KM.	VERT	S. #

TOTAL PHOTOS IN THIS GROUP = 21

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SM.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUH= MAUHER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 = AS EXPOS SPEED = 1/1000 (OR == TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NFG. AT PP IF ALT NOT 0.0

MIS SION	MAG #	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HH M SEC (I=ESTIMATED)	GMT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=N.MI PT. K=KM.	T I L T AZ ANG. ANG. FR. LAP VERT S, R	SUN SIDE, FWD.
L 1	2	154	0.58N 36.47W	90 ***	233105	8-27-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	274 4.1 16	-.48
CAM.NAD.= 0.57N 36.35W SWING= 95. PHASE= 70. EMIS.ANG.= 4. CAM.RAD.= 1790.2 KM. SUN AZM= 88.6											
S. E. PART OF LAC 57 KEPLER, ENCKE 6 N. E. PART OF LAC 75 LETRONNE, FLAMSTO											
L 1	4	155	0.45N 35.86W	90 ***	233115	8-27-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	272 3.5 16	-.47
CAM.NAD.= 0.45N 35.75W SWING= 94. PHASE= 70. EMIS.ANG.= 4. CAM.RAD.= 1790.2 KM. SUN AZM= 88.5											
S. E. PART OF LAC 57 KEPLER, ENCKE 6 N. E. PART OF LAC 75 LETRONNE, FLAMSTO											
L 1	2	156	0.32N 35.24W	90 ***	233125	8-27-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K 625000	270 2.9 17	-.46
CAM.NAD.= 0.32N 35.15W SWING= 92. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 1789.2 KM. SUN AZM= 88.5											
S. E. PART OF LAC 57 KEPLER, ENCKE 6 N. E. PART OF LAC 75 LETRONNE, FLAMSTO											
L 1	2	175	3.42S 35.30W	98 ***	030536	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K 625000	148 19.8 31	-.00
CAM.NAD.= 2.91S 35.62W SWING= 324. PHASE= 70. EMIS.ANG.= 20. CAM.RAD.= 1789.2 KM. SUN AZM= 86.2											
N. E. PART OF LAC 75 LETRONNE, FLAMSTO											
L 1	2	176	3.04S 37.03W	99 ***	063159	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	148 .8 31	-.00
CAM.NAD.= 3.02S 37.04W SWING= 316. PHASE= 60. EMIS.ANG.= 1. CAM.RAD.= 1790.2 KM. SUN AZM= 86.4											
N. E. PART OF LAC 75 LETRONNE, FLAMSTO											
L 1	2	177	3.06S 36.89W	99 ***	063201	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	141 .9 31	-.87
CAM.NAD.= 3.04S 36.91W SWING= 309. PHASE= 60. EMIS.ANG.= 1. CAM.RAD.= 1790.2 KM. SUN AZM= 86.4											
N. E. PART OF LAC 75 LETRONNE, FLAMSTO											
L 1	2	178	3.09S 36.75W	99 ***	063204	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	136 1.0 31	-.87
CAM.NAD.= 3.07S 36.77W SWING= 304. PHASE= 60. EMIS.ANG.= 1. CAM.RAD.= 1790.2 KM. SUN AZM= 86.4											
N. E. PART OF LAC 75 LETRONNE, FLAMSTO											
L 1	2	179	3.12S 36.61W	99 ***	063206	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	132 1.1 31	-.87
CAM.NAD.= 3.10S 36.64W SWING= 300. PHASE= 60. EMIS.ANG.= 1. CAM.RAD.= 1790.2 KM. SUN AZM= 86.3											
N. E. PART OF LAC 75 LETRONNE, FLAMSTO											
L 1	2	180	3.15S 36.47W	99 ***	063208	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	129 1.2 31	-.87
CAM.NAD.= 3.13S 36.50W SWING= 297. PHASE= 60. EMIS.ANG.= 1. CAM.RAD.= 1790.2 KM. SUN AZM= 86.3											
N. E. PART OF LAC 75 LETRONNE, FLAMSTO											

MIS SION	MAG #	FR. PHOTO OR MAIN	PRIN. PT. LAT.	URB LONG.	GET TIMES-HK (ESTIMATED)	GHT M SEC	H-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE	SCALE AT PRIN. M=N.MI K=KM.	T I L T AZ	SUN SIDE ANG. FR. VERT	SIDE ANG. FWD. LAP 8. 8
L 1	2	181	3.185	36.33W	79 ***	063210	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	126	1.4 31	-.87
CAM.NAD.= 3.155 36.37W SWING= 294. PHASE= 60. EMIS.ANG.= 1. CAM.RAD.= 1790.2 KM. SUN AZM= 86.3 N. E. PART OF LAC 75 LETRONNE, FLAMSTO														
L 1	2	182	3.215	36.19W	99 ***	063213	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	124	1.5 31	-.87
CAM.NAD.= 3.185 36.23W SWING= 292. PHASE= 60. EMIS.ANG.= 1. CAM.RAD.= 1791.2 KM. SUN AZM= 86.3 N. E. PART OF LAC 75 LETRONNE, FLAMSTO														
L 1	2	183	3.235	36.35W	99 ***	063215	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	122	1.6 32	-.87
CAM.NAD.= 3.215 36.09W SWING= 290. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 86.2 N. E. PART OF LAC 75 LETRONNE, FLAMSTO														
L 1	2	184	1.895	44.39W	100 ***	095644	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	300	1.0 25	-.88
CAM.NAD.= 1.915 44.37W SWING= 108. PHASE= 64. EMIS.ANG.= 1. CAM.RAD.= 1788.2 KM. SUN AZM= 87.4 N. W. PART OF LAC 75 LETRONNE, FLAMSTO														
L 1	2	185	1.925	44.26W	100 ***	095646	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	302	.9 25	-.88
CAM.NAD.= 1.935 44.24W SWING= 111. PHASE= 64. EMIS.ANG.= 1. CAM.RAD.= 1788.2 KM. SUN AZM= 87.4 N. W. PART OF LAC 75 LETRONNE, FLAMSTO														
L 1	2	186	1.955	44.14W	100 ***	095648	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	304	.7 25	-.88
CAM.NAD.= 1.965 44.12W SWING= 115. PHASE= 64. EMIS.ANG.= 1. CAM.RAD.= 1788.2 KM. SUN AZM= 87.4 N. W. PART OF LAC 75 LETRONNE, FLAMSTO														
L 1	2	187	1.975	44.01W	100 ***	095650	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	311	.6 25	-.88
CAM.NAD.= 1.995 43.99W SWING= 120. PHASE= 64. EMIS.ANG.= 1. CAM.RAD.= 1788.2 KM. SUN AZM= 87.4 N. W. PART OF LAC 75 LETRONNE, FLAMSTO														
L 1	2	188	2.005	43.88W	100 ***	095652	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	318	.5 26	-.88
CAM.NAD.= 2.015 43.87W SWING= 127. PHASE= 64. EMIS.ANG.= 1. CAM.RAD.= 1788.2 KM. SUN AZM= 87.4 N. W. PART OF LAC 75 LETRONNE, FLAMSTO														
L 1	2	189	2.035	43.75W	100 ***	095654	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	329	.4 26	-.88
CAM.NAD.= 2.045 43.74W SWING= 138. PHASE= 64. EMIS.ANG.= 0. CAM.RAD.= 1788.2 KM. SUN AZM= 87.3 N. W. PART OF LAC 75 LETRONNE, FLAMSTO														
L 1	2	190	2.065	43.62W	100 ***	095656	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	346	.3 26	-.88
CAM.NAD.= 2.075 43.61W SWING= 154. PHASE= 64. EMIS.ANG.= 0. CAM.RAD.= 1788.2 KM. SUN AZM= 87.3 N. W. PART OF LAC 75 LETRONNE, FLAMSTO														
L 1	2	191	2.085	43.49W	100 ***	095659	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	8	.3 26	-.88
CAM.NAD.= 2.095 43.49W SWING= 176. PHASE= 64. EMIS.ANG.= 0. CAM.RAD.= 1788.2 KM. SUN AZM= 87.3 N. W. PART OF LAC 75 LETRONNE, FLAMSTO														
L 1	2	192	2.115	43.36W	100 ***	095701	8-29-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	31	.3 26	-.88
CAM.NAD.= 2.125 43.36W SWING= 199. PHASE= 64. EMIS.ANG.= 0. CAM.RAD.= 1788.2 KM. SUN AZM= 87.3 N. W. PART OF LAC 75 LETRONNE, FLAMSTO														

DIS SION	MAG ROLL	FR, PHOTO OR	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUBE PRIN. M=N.MI PT.	T I L T AZ ANG. ANG. FWD. VERT FR. LAP 8. 8	SUN SIDE.
L 1	2	193	2.145	43.23W	100	000	095703	8-29-66 LUNAR ORB LO.F=80MM B&W	- NONE	49K 612500	49	04 26 -0.87
		CAM.NAD.=	2.145	43.23W		SWING= 218.	PHASE= 64.	EMIS.ANG.= 0.	CAM.RAD.=	1788.2 KM.	SUN AZM= 87.3	
				N. W. PART OF			LAC 75 LETRONNE, FLAMSTU					
L 1	2	194	2.165	43.18W	103	000	095705	8-29-66 LUNAR ORB LO.F=80MM B&W	- NONE	49K 612500	61	05 26 -0.88
		CAM.NAD.=	2.175	43.18W		SWING= 230.	PHASE= 64.	EMIS.ANG.= 1.	CAM.RAD.=	1786.2 KM.	SUN AZM= 87.2	
				N. W. PART OF			LAC 75 LETRONNE, FLAMSTU					
L 1	2	195	2.195	42.96W	100	000	095707	8-29-66 LUNAR ORB LO.F=80MM B&W	- NONE	49K 612500	70	06 26 -0.88
		CAM.NAD.=	2.205	42.98W		SWING= 238.	PHASE= 64.	EMIS.ANG.= 1.	CAM.RAD.=	1786.2 KM.	SUN AZM= 87.2	
				N. W. PART OF			LAC 75 LETRONNE, FLAMSTU					
L 1	2	196	2.225	42.83W	100	000	095709	8-29-66 LUNAR ORB LO.F=80MM B&W	- NONE	49K 612500	75	07 27 -0.88
		CAM.NAD.=	2.225	42.85W		SWING= 244.	PHASE= 64.	EMIS.ANG.= 1.	CAM.RAD.=	1788.2 KM.	SUN AZM= 87.2	
				N. W. PART OF			LAC 75 LETRONNE, FLAMSTU					
L 1	2	197	2.245	42.70W	100	000	095711	8-29-66 LUNAR ORB LO.F=80MM B&W	- NONE	49K 612500	79	08 27 -0.88
		CAM.NAD.=	2.255	42.73W		SWING= 248.	PHASE= 64.	EMIS.ANG.= 1.	CAM.RAD.=	1788.2 KM.	SUN AZM= 87.2	
				N. W. PART OF			LAC 75 LETRONNE, FLAMSTU					
L 1	2	198	2.275	42.57W	100	000	095713	8-29-66 LUNAR ORB LO.F=80MM B&W	- NONE	49K 612500	82	09 27 -0.87
		CAM.NAD.=	2.275	42.60W		SWING= 251.	PHASE= 64.	EMIS.ANG.= 1.	CAM.RAD.=	1788.2 KM.	SUN AZM= 87.1	
				N. W. PART OF			LAC 75 LETRONNE, FLAMSTU					
L 1	2	199	2.305	42.44W	100	000	095715	8-29-66 LUNAR ORB LO.F=80MM B&W	- NONE	49K 612500	84	10 27 -0.88
		CAM.NAD.=	2.305	42.47W		SWING= 253.	PHASE= 64.	EMIS.ANG.= 1.	CAM.RAD.=	1788.2 KM.	SUN AZM= 87.1	
				N. W. PART OF			LAC 75 LETRONNE, FLAMSTU					
L 1	2	200	2.305	44.39W	101	000	132330	8-29-66 LUNAR ORB LO.F=80MM B&W	- NONE	50K 625000	314	05 27 -0.88
		CAM.NAD.=	2.315	44.38W		SWING= 122.	PHASE= 63.	EMIS.ANG.= 1.	CAM.RAD.=	1789.2 KM.	SUN AZM= 87.1	
				N. W. PART OF			LAC 75 LETRONNE, FLAMSTU					
L 1	2	201	2.335	44.26W	101	000	132333	8-29-66 LUNAR ORB LO.F=80MM B&W	- NONE	50K 625000	324	04 27 -0.87
		CAM.NAD.=	2.345	44.25W		SWING= 133.	PHASE= 63.	EMIS.ANG.= 0.	CAM.RAD.=	1789.2 KM.	SUN AZM= 87.1	
				N. W. PART OF			LAC 75 LETRONNE, FLAMSTU					
L 1	2	202	2.365	44.13W	101	000	132335	8-29-66 LUNAR ORB LO.F=80MM B&W	- NONE	50K 625000	341	03 27 -0.87
		CAM.NAD.=	2.375	44.13W		SWING= 149.	PHASE= 63.	EMIS.ANG.= 0.	CAM.RAD.=	1789.2 KM.	SUN AZM= 87.1	
				N. W. PART OF			LAC 75 LETRONNE, FLAMSTU					
L 1	2	203	2.385	44.00W	101	000	132337	8-29-66 LUNAR ORB LO.F=80MM B&W	- NONE	50K 625000	6	03 27 -0.87
		CAM.NAD.=	2.395	44.00W		SWING= 174.	PHASE= 63.	EMIS.ANG.= 0.	CAM.RAD.=	1789.2 KM.	SUN AZM= 87.1	
				N. W. PART OF			LAC 75 LETRONNE, FLAMSTU					
L 1	2	204	2.415	43.86W	101	000	132339	8-29-66 LUNAR ORB LO.F=80MM B&W	- NONE	50K 625000	33	03 27 -0.87
		CAM.NAD.=	2.425	43.87W		SWING= 201.	PHASE= 63.	EMIS.ANG.= 0.	CAM.RAD.=	1789.2 KM.	SUN AZM= 87.0	
				N. W. PART OF			LAC 75 LETRONNE, FLAMSTU					



REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MIS SION	HAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB N	GET TIMES-HR M SEC (ESTIMATED)	GHT M	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	TILT AZ	SUN SIDE, ANG. ANG. FWD. FR. LAP VERT S. S
L 1	2	205	2.445	43.73W 101	*** **** 132341	8-29-66	LUNAR	ORB LO.F=80MM B&W	- NONE	50K 625000	53	.4 27	-.87
CAM. RAD. = 2.455 43.74W SWING= 221. PHASE= 63. EMIS. ANG. = 0.													
N. W. PART OF LAC 75 LETRONNE, FLAMSTO													
L 1	2	206	2.475	43.60W 101	*** **** 132343	8-29-66	LUNAR	ORB LO.F=80MM B&W	- NONE	50K 625000	65	.5 28	-.87
CAM. RAD. = 2.475 43.61W SWING= 233. PHASE= 63. EMIS. ANG. = 1.													
N. W. PART OF LAC 75 LETRONNE, FLAMSTO													
L 1	2	207	2.495	43.46W 101	*** **** 132346	8-29-66	LUNAR	ORB LO.F=80MM B&W	- NONE	50K 625000	73	.6 28	-.87
CAM. RAD. = 2.505 43.48W SWING= 241. PHASE= 63. EMIS. ANG. = 1.													
N. W. PART OF LAC 75 LETRONNE, FLAMSTO													
L 1	2	208	2.525	43.33W 101	*** **** 132348	8-29-66	LUNAR	ORB LO.F=80MM B&W	- NONE	50K 625000	78	.7 28	-.87
CAM. RAD. = 2.535 43.35W SWING= 246. PHASE= 63. EMIS. ANG. = 1.													
N. W. PART OF LAC 75 LETRONNE, FLAMSTO													
L 1	2	209	2.555	43.20W 101	*** **** 132350	8-29-66	LUNAR	ORB LO.F=80MM B&W	- NONE	50K 625000	82	.8 28	-.87
CAM. RAD. = 2.555 43.22W SWING= 250. PHASE= 63. EMIS. ANG. = 1.													
N. W. PART OF LAC 75 LETRONNE, FLAMSTO													
L 1	2	210	2.585	43.04W 101	*** **** 132352	8-29-66	LUNAR	ORB LO.F=80MM B&W	- NONE	50K 625000	84	.9 28	-.87
CAM. RAD. = 2.585 43.09W SWING= 253. PHASE= 63. EMIS. ANG. = 1.													
N. W. PART OF LAC 75 LETRONNE, FLAMSTO													
L 1	2	211	2.615	42.93W 101	*** **** 132354	8-29-66	LUNAR	ORB LO.F=80MM B&W	- NONE	50K 625000	86	1.1 28	-.87
CAM. RAD. = 2.615 42.96W SWING= 255. PHASE= 63. EMIS. ANG. = 1.													
N. W. PART OF LAC 75 LETRONNE, FLAMSTO													
L 1	2	212	2.635	42.79W 101	*** **** 132356	8-29-66	LUNAR	ORB LO.F=80MM B&W	- NONE	50K 625000	88	1.2 28	-.88
CAM. RAD. = 2.635 42.83W SWING= 256. PHASE= 63. EMIS. ANG. = 1.													
N. W. PART OF LAC 75 LETRONNE, FLAMSTO													
L 1	2	213	2.665	42.66W 101	*** **** 132358	8-29-66	LUNAR	ORB LO.F=80MM B&W	- NONE	51K 637500	89	1.3 28	-.87
CAM. RAD. = 2.665 42.70W SWING= 258. PHASE= 63. EMIS. ANG. = 1.													
N. W. PART OF LAC 75 LETRONNE, FLAMSTO													
L 1	2	214	2.695	42.53W 101	*** **** 132401	8-29-66	LUNAR	ORB LO.F=80MM B&W	- NONE	51K 637500	90	1.5 29	-.87
CAM. RAD. = 2.695 42.57W SWING= 259. PHASE= 63. EMIS. ANG. = 1.													
N. W. PART OF LAC 75 LETRONNE, FLAMSTO													
L 1	2	215	2.715	42.39W 101	*** **** 132403	8-29-66	LUNAR	ORB LO.F=80MM B&W	- NONE	51K 637500	91	1.6 29	-.88
CAM. RAD. = 2.715 42.44W SWING= 260. PHASE= 63. EMIS. ANG. = 2.													
N. W. PART OF LAC 75 LETRONNE, FLAMSTO													
L 3	2	161	1.59N	42.03W 83	*** **** 013338	2-21-67	LUNAR	ORB LO.F=80MM B&W	- NONE	54K 675000	269	64.8 6	-.00
CAM. RAD. = 1.63N 37.90W SWING= 81. PHASE= 15. EMIS. ANG. = 69.													
SOUTHERN PART OF LAC 57 KEPLER, ENCKE													
6 NORTHERN PART OF LAC 75 LETRONNE, FLAMSTO													

SUN	ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HH M SEC (ESTIMATED)	GMT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT		T I L T	SUN SIDE	
										TUDE H=M,N,HI K=KM.	PRIN. PT.		AZ	ANG. ANG. FR. VERT
L 3	1	171	J-86S 36.90W	87 ***	153102	2-21-67	LUNAR	ORB HI. 610MM B&W	- NONE	52K	85246	255	62.5 18	-..
		CAM-NAD.=	2.98S 33.48W		SWING= 20.	PHASE= 15.	EMIS-ANG.= 66.	CAM-RAD.=	1791.2 KM.	SUN AZM= 90.2				
		N. E. PART OF LAC 75 LETRONNE, FLAMSTO												
L 3	2	171*	J-86S 36.89W	87 ***	153102	2-21-67	LUNAR	ORB LO.F=80MM B&W	- NONE	52K	450000	255	62.5 18	-..
		CAM-NAD.=	2.98S 33.48W		SWING= 21.	PHASE= 15.	EMIS-ANG.= 66.	CAM-RAD.=	1791.2 KM.	SUN AZM= 90.2				
		NORTHERN PART OF LAC 75 LETRONNE, FLAMSTO												
L 3	1	172	2.42S 44.07W	88 ***	185813	2-21-67	LUNAR	ORB HI. 610MM B&W	- NONE	52K	85246	255	66.6 13	-..
		CAM-NAD.=	1.29S 39.85W		SWING= 21.	PHASE= 16.	EMIS-ANG.= 71.	CAM-RAD.=	1791.2 KM.	SUN AZM= 90.9				
		N. E. PART OF LAC 75 LETRONNE, FLAMSTO												
L 3	2	172	2.41S 44.06W	88 ***	185813	2-21-67	LUNAR	ORB LO.F=80MM B&W	- NONE	52K	650000	255	66.5 13	-..
		CAM-NAD.=	1.30S 39.84W		SWING= 21.	PHASE= 16.	EMIS-ANG.= 71.	CAM-RAD.=	1791.2 KM.	SUN AZM= 90.9				
		N. E. PART OF LAC 75 LETRONNE, FLAMSTO												
L 3	1	173	3.25S 37.27W	89 ***	222759	2-21-67	LUNAR	ORB HI. 610MM B&W	- NONE	53K	86885	189	3.5 21	-..
		CAM-NAD.=	3.15S 37.25W		SWING= 349.	PHASE= 68.	EMIS-ANG.= 4.	CAM-RAD.=	1792.2 KM.	SUN AZM= 90.3				
		N. E. PART OF LAC 75 LETRONNE, FLAMSTO												
L 3	2	173	3.25S 37.26W	89 ***	222759	2-21-67	LUNAR	ORB LO.F=80MM B&W	- NONE	53K	662500	190	3.5 21	-..
		CAM-NAD.=	3.15S 37.24W		SWING= 350.	PHASE= 68.	EMIS-ANG.= 4.	CAM-RAD.=	1792.2 KM.	SUN AZM= 90.3				
		N. E. PART OF LAC 75 LETRONNE, FLAMSTO												
L 3	1	174	3.30S 37.13W	89 ***	222801	2-21-67	LUNAR	ORB HI. 610MM B&W	- NONE	53K	86885	187	3.6 21	-..
		CAM-NAD.=	3.20S 37.12W		SWING= 347.	PHASE= 68.	EMIS-ANG.= 4.	CAM-RAD.=	1792.2 KM.	SUN AZM= 90.2				
		N. E. PART OF LAC 75 LETRONNE, FLAMSTO												
L 3	2	174	3.30S 37.13W	89 ***	222801	2-21-67	LUNAR	ORB LO.F=80MM B&W	- NONE	53K	662500	188	3.5 21	-..
		CAM-NAD.=	3.20S 37.11W		SWING= 348.	PHASE= 68.	EMIS-ANG.= 4.	CAM-RAD.=	1792.2 KM.	SUN AZM= 90.2				
		N. E. PART OF LAC 75 LETRONNE, FLAMSTO												
L 3	1	175	3.36S 36.99W	89 ***	222803	2-21-67	LUNAR	ORB HI. 610MM B&W	- NONE	53K	86885	184	3.6 22	-..
		CAM-NAD.=	3.25S 36.98W		SWING= 344.	PHASE= 68.	EMIS-ANG.= 4.	CAM-RAD.=	1792.2 KM.	SUN AZM= 90.2				
		N. E. PART OF LAC 75 LETRONNE, FLAMSTO												
L 3	2	175	3.36S 36.99W	89 ***	222804	2-21-67	LUNAR	ORB LO.F=80MM B&W	- NONE	53K	662500	186	3.5 22	-..
		CAM-NAD.=	3.25S 36.98W		SWING= 345.	PHASE= 68.	EMIS-ANG.= 4.	CAM-RAD.=	1792.2 KM.	SUN AZM= 90.2				
		N. E. PART OF LAC 75 LETRONNE, FLAMSTO												
L 3	1	176	3.41S 36.85W	89 ***	222806	2-21-67	LUNAR	ORB HI. 610MM B&W	- NONE	54K	88625	182	3.6 22	-..
		CAM-NAD.=	3.30S 36.85W		SWING= 342.	PHASE= 68.	EMIS-ANG.= 4.	CAM-RAD.=	1793.2 KM.	SUN AZM= 90.2				
		N. E. PART OF LAC 75 LETRONNE, FLAMSTO												
L 3	2	176	3.41S 36.85W	89 ***	222806	2-21-67	LUNAR	ORB LO.F=80MM B&W	- NONE	54K	675000	183	3.6 22	-..
		CAM-NAD.=	3.30S 36.84W		SWING= 343.	PHASE= 68.	EMIS-ANG.= 4.	CAM-RAD.=	1793.2 KM.	SUN AZM= 90.2				
		N. E. PART OF LAC 75 LETRONNE, FLAMSTO												

L	3	I	FR. PHOTO OR MAIN	PRIN. LAT.	PRIN. LONG.	ORB M	GET TIMES-HK M SEC	GHT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TIDE		PRIN. PT.	TILT AZ	TILT ANG. FR. VERT	SUN SIDE ANG.	LAP B. 8
												M=N.MI K=KM.	PT.					
L 3	1	177	3.465	36.72W	89 00 0000	222808	2-21-67	LUNAR	ORB HI. 610MM 86W	- NONE	54K	88525	180	3.7 22	- .7			
CAM-NAD.= 3.355 36.71W SWING= 340. PHASE= 68. EMIS-ANG.= 4.												CAM-RAD.= 1793.2 KM.		SUN AZM= 90.2				
N. E. PART OF LAC 75 LETRONNE-FLANSTO																		
L 3	2	177	3.465	36.71W	89 00 0000	222808	2-21-67	LUNAR	ORB LO.F=80MM 86W	- NONE	54K	675000	181	3.6 22	-.87			
CAM-NAD.= 3.355 36.71W SWING= 341. PHASE= 68. EMIS-ANG.= 4.												CAM-RAD.= 1793.2 KM.		SUN AZM= 90.2				
N. E. PART OF LAC 75 LETRONNE-FLANSTO																		
L 3	1	178	3.515	36.58W	89 00 0000	222811	2-21-67	LUNAR	ORB HI. 610MM 86W	- NONE	54K	88525	178	3.7 22	- .7			
CAM-NAD.= 3.405 36.58W SWING= 338. PHASE= 68. EMIS-ANG.= 4.												CAM-RAD.= 1793.2 KM.		SUN AZM= 90.1				
N. E. PART OF LAC 75 LETRONNE-FLANSTO																		
L 3	2	178	3.515	36.57W	89 00 0000	222811	2-21-67	LUNAR	ORB LO.F=80MM 86W	- NONE	54K	675000	179	3.7 22	-.87			
CAM-NAD.= 3.405 36.57W SWING= 339. PHASE= 68. EMIS-ANG.= 4.												CAM-RAD.= 1793.2 KM.		SUN AZM= 90.1				
N. E. PART OF LAC 75 LETRONNE-FLANSTO																		
L 3	1	179	3.565	36.44W	89 00 0000	222813	2-21-67	LUNAR	ORB HI. 610MM 86W	- NONE	54K	88525	176	3.8 22	- .7			
CAM-NAD.= 3.455 36.45W SWING= 336. PHASE= 68. EMIS-ANG.= 4.												CAM-RAD.= 1793.2 KM.		SUN AZM= 90.1				
N. E. PART OF LAC 75 LETRONNE-FLANSTO																		
L 3	2	179	3.565	36.43W	89 00 0000	222813	2-21-67	LUNAR	ORB LO.F=80MM 86W	- NONE	54K	675000	177	3.7 22	-.87			
CAM-NAD.= 3.455 36.44W SWING= 337. PHASE= 68. EMIS-ANG.= 4.												CAM-RAD.= 1793.2 KM.		SUN AZM= 90.1				
N. E. PART OF LAC 75 LETRONNE-FLANSTO																		
L 3	1	180	3.625	36.30W	89 00 0000	222815	2-21-67	LUNAR	ORB HI. 610MM 86W	- NONE	54K	88525	174	3.9 22	- .7			
CAM-NAD.= 3.505 36.31W SWING= 334. PHASE= 68. EMIS-ANG.= 4.												CAM-RAD.= 1793.2 KM.		SUN AZM= 90.1				
N. E. PART OF LAC 75 LETRONNE-FLANSTO																		
L 3	2	180	3.625	36.29W	89 00 0000	222815	2-21-67	LUNAR	ORB LO.F=80MM 86W	- NONE	54K	675000	175	3.8 22	-.87			
CAM-NAD.= 3.505 36.30W SWING= 335. PHASE= 68. EMIS-ANG.= 4.												CAM-RAD.= 1793.2 KM.		SUN AZM= 90.1				
N. E. PART OF LAC 75 LETRONNE-FLANSTO																		
L 3	1	181	2.225	43.50W	90 00 0000	015514	2-22-67	LUNAR	ORB HI. 610MM 86W	- NONE	53K	86885	200	19.0 17	-.00			
CAM-NAD.= 1.655 43.28W SWING= 366. PHASE= 68. EMIS-ANG.= 20.												CAM-RAD.= 1792.2 KM.		SUN AZM= 90.8				
NORTHERN PART OF LAC 75 LETRONNE-FLANSTO																		
L 3	2	181	2.225	43.49W	90 00 0000	015514	2-22-67	LUNAR	ORB LO.F=80MM 86W	- NONE	53K	662500	200	18.9 17	-.00			
CAM-NAD.= 1.665 43.28W SWING= 366. PHASE= 68. EMIS-ANG.= 19.												CAM-RAD.= 1792.2 KM.		SUN AZM= 90.8				
NORTHERN PART OF LAC 75 LETRONNE-FLANSTO																		
L 3	1	182	2.285	43.35W	90 00 0000	015517	2-22-67	LUNAR	ORB HI. 610MM 86W	- NONE	53K	86885	199	19.0 17	-.10			
CAM-NAD.= 1.705 43.15W SWING= 359. PHASE= 68. EMIS-ANG.= 20.												CAM-RAD.= 1792.2 KM.		SUN AZM= 90.8				
NORTHERN PART OF LAC 75 LETRONNE-FLANSTO																		
L 3	2	182	2.285	43.35W	90 00 0000	015517	2-22-67	LUNAR	ORB LO.F=80MM 86W	- NONE	53K	662500	200	18.9 17	-.88			
CAM-NAD.= 1.715 43.14W SWING= 359. PHASE= 68. EMIS-ANG.= 19.												CAM-RAD.= 1792.2 KM.		SUN AZM= 90.8				
NORTHERN PART OF LAC 75 LETRONNE-FLANSTO																		

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. N	ORB TIMES-HR	GET (ESTIMATED)	GMT M SEC	N-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. PT.	TILT AZ	SUN ANG.	SIDE, ANG. FR. VERT	FWD. LAP S. S
L 3	1	183	2.33S	43.21W	90	***	015519	2-22-67	LUNAR	ORB HI. 610MM 86W	- NONE	53K	86885	199	19.0	17	-10
CAM-NAD.= 1.76S 43.01W SWING= 359. PHASE= 68. EMIS-ANG.= 20.																	
NORTHERN PART OF LAC 75 LETRONNE, FLAMSTO																	
L 3	2	183	2.33S	43.21W	90	***	015519	2-22-67	LUNAR	ORB LO.F=80MM 86W	- NONE	53K	662500	199	18.9	17	-88
CAM-NAD.= 1.76S 43.00W SWING= 359. PHASE= 68. EMIS-ANG.= 19.																	
NORTHERN PART OF LAC 75 LETRONNE, FLAMSTO																	
L 3	1	184	2.38S	43.07W	90	***	015521	2-22-67	LUNAR	ORB HI. 610MM 86W	- NONE	53K	86885	199	19.0	17	-10
CAM-NAD.= 1.81S 42.87W SWING= 358. PHASE= 68. EMIS-ANG.= 20.																	
NORTHERN PART OF LAC 75 LETRONNE, FLAMSTO																	
L 3	2	184	2.38S	43.07W	90	***	015521	2-22-67	LUNAR	ORB LO.F=80MM 86W	- NONE	53K	662500	199	18.9	17	-88
CAM-NAD.= 1.81S 42.87W SWING= 358. PHASE= 68. EMIS-ANG.= 19.																	
NORTHERN PART OF LAC 75 LETRONNE, FLAMSTO																	
L 3	1	185	2.30S	44.67W	91	***	052353	2-22-67	LUNAR	ORB HI. 610MM 86W	- NONE	54K	88525	201	12.7	17	-..
CAM-NAD.= 1.93S 44.52W SWING= 1. PHASE= 68. EMIS-ANG.= 13.																	
N. W. PART OF LAC 75 LETRONNE, FLAMSTO																	
L 3	2	185	2.30S	44.67W	91	***	052353	2-22-67	LUNAR	ORB LO.F=80MM 86W	- NONE	54K	675000	202	12.6	17	-..
CAM-NAD.= 1.93S 44.52W SWING= 1. PHASE= 68. EMIS-ANG.= 13.																	
N. W. PART OF LAC 75 LETRONNE, FLAMSTO																	
L 3	1	186	2.35S	44.53W	91	***	052355	2-22-67	LUNAR	ORB HI. 610MM 86W	- NONE	54K	88525	201	12.7	18	-.. 9
CAM-NAD.= 1.98S 44.39W SWING= 0. PHASE= 68. EMIS-ANG.= 13.																	
N. W. PART OF LAC 75 LETRONNE, FLAMSTO																	
L 3	2	186	2.35S	44.53W	91	***	052356	2-22-67	LUNAR	ORB LO.F=80MM 86W	- NONE	54K	675000	201	12.6	18	-88
CAM-NAD.= 1.98S 44.38W SWING= 1. PHASE= 68. EMIS-ANG.= 13.																	
N. W. PART OF LAC 75 LETRONNE, FLAMSTO																	
L 3	1	187	2.40S	44.39W	91	***	052358	2-22-67	LUNAR	ORB HI. 610MM 86W	- NONE	54K	88525	200	12.7	18	-.. 8
CAM-NAD.= 2.03S 44.25W SWING= 360. PHASE= 68. EMIS-ANG.= 13.																	
N. W. PART OF LAC 75 LETRONNE, FLAMSTO																	
L 3	2	187	2.40S	44.38W	91	***	052358	2-22-67	LUNAR	ORB LO.F=80MM 86W	- NONE	54K	675000	200	12.6	18	-88
CAM-NAD.= 2.03S 44.29W SWING= 0. PHASE= 68. EMIS-ANG.= 13.																	
N. W. PART OF LAC 75 LETRONNE, FLAMSTO																	
L 3	1	188	2.46S	44.25W	91	***	052400	2-22-67	LUNAR	ORB HI. 610MM 86W	- NONE	54K	88525	199	12.7	18	-.. 9
CAM-NAD.= 2.08S 44.11W SWING= 359. PHASE= 68. EMIS-ANG.= 13.																	
N. W. PART OF LAC 75 LETRONNE, FLAMSTO																	
L 3	2	188	2.46S	44.24W	91	***	052400	2-22-67	LUNAR	ORB LO.F=80MM 86W	- NONE	54K	675000	200	12.6	18	-88
CAM-NAD.= 2.08S 44.11W SWING= 359. PHASE= 68. EMIS-ANG.= 13.																	
N. W. PART OF LAC 75 LETRONNE, FLAMSTO																	

HIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB N	GET TIMES-HH (ESTIMATED)	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE, ANG. FR. VERT	SUN AZH	SIDE, ANG. FR. VERT	FWD. LAP S, %
L 3	1	189	2.515	44.11N	91 ***	052403	2-22-67	LUNAR ORB HI, 610MM B&W	- NONE	54K	88525	199	12.7 18	- . 9		
		CAM-NAD.=	2.135	43.98W	SWING= 358.	PHASE= 68.		EMIS-ANG.= 13.	CAM-RAD.=	1793.2 KM.		SUN	AZH= 90.7			
				N. W. PART OF	LAC 75 LETRONNE, FLAMSTO											
L 3	2	189	2.515	44.10W	91 ***	052403	2-22-67	LUNAR ORB LO, F=80MM B&W	- NONE	54K	675000	199	12.6 18	- .88		
		CAM-NAD.=	2.135	43.97W	SWING= 359.	PHASE= 68.		EMIS-ANG.= 13.	CAM-RAD.=	1793.2 KM.		SUN	AZH= 90.7			
				N. W. PART OF	LAC 75 LETRONNE, FLAMSTO											
L 3	1	190	2.565	43.97W	91 ***	052405	2-22-67	LUNAR ORB HI, 610MM B&W	- NONE	54K	88525	198	12.7 18	- . 9		
		CAM-NAD.=	2.185	43.84W	SWING= 358.	PHASE= 68.		EMIS-ANG.= 13.	CAM-RAD.=	1793.2 KM.		SUN	AZH= 90.7			
				N. W. PART OF	LAC 75 LETRONNE, FLAMSTO											
L 3	2	190	2.565	43.96W	91 ***	052405	2-22-67	LUNAR ORB LO, F=80MM B&W	- NONE	54K	675000	198	12.6 18	- .88		
		CAM-NAD.=	2.185	43.83W	SWING= 358.	PHASE= 68.		EMIS-ANG.= 13.	CAM-RAD.=	1793.2 KM.		SUN	AZH= 90.7			
				N. W. PART OF	LAC 75 LETRONNE, FLAMSTO											
L 3	1	191	2.625	43.83W	91 ***	052407	2-22-67	LUNAR ORB HI, 610MM B&W	- NONE	54K	88525	197	12.7 18	- . 9		
		CAM-NAD.=	2.235	43.78W	SWING= 357.	PHASE= 68.		EMIS-ANG.= 13.	CAM-RAD.=	1793.2 KM.		SUN	AZH= 90.6			
				N. W. PART OF	LAC 75 LETRONNE, FLAMSTO											
L 3	2	191	2.625	43.82W	91 ***	052407	2-22-67	LUNAR ORB LO, F=80MM B&W	- NONE	54K	675000	198	12.6 18	- .88		
		CAM-NAD.=	2.245	43.69W	SWING= 357.	PHASE= 68.		EMIS-ANG.= 13.	CAM-RAD.=	1793.2 KM.		SUN	AZH= 90.6			
				N. W. PART OF	LAC 75 LETRONNE, FLAMSTO											
L 3	1	192	2.675	43.69W	91 ***	052410	2-22-67	LUNAR ORB HI, 610MM B&W	- NONE	54K	88525	197	12.7 18	- . 9		
		CAM-NAD.=	2.285	43.57W	SWING= 356.	PHASE= 68.		EMIS-ANG.= 13.	CAM-RAD.=	1793.2 KM.		SUN	AZH= 90.6			
				N. W. PART OF	LAC 75 LETRONNE, FLAMSTO											
L 3	2	192	2.675	43.68W	91 ***	052410	2-22-67	LUNAR ORB LO, F=80MM B&W	- NONE	54K	675000	197	12.6 18	- .88		
		CAM-NAD.=	2.295	43.56W	SWING= 357.	PHASE= 68.		EMIS-ANG.= 13.	CAM-RAD.=	1793.2 KM.		SUN	AZH= 90.6			
				N. W. PART OF	LAC 75 LETRONNE, FLAMSTO											
L 3	1	193	2.725	43.55W	91 ***	052412	2-22-67	LUNAR ORB HI, 610MM B&W	- NONE	54K	88525	196	12.7 18	- . 9		
		CAM-NAD.=	2.345	43.43W	SWING= 356.	PHASE= 68.		EMIS-ANG.= 13.	CAM-RAD.=	1793.2 KM.		SUN	AZH= 90.6			
				N. W. PART OF	LAC 75 LETRONNE, FLAMSTO											
L 3	2	193	2.725	43.54W	91 ***	052412	2-22-67	LUNAR ORB LO, F=80MM B&W	- NONE	54K	675000	196	12.7 18	- .88		
		CAM-NAD.=	2.345	43.42W	SWING= 356.	PHASE= 68.		EMIS-ANG.= 13.	CAM-RAD.=	1793.2 KM.		SUN	AZH= 90.6			
				N. W. PART OF	LAC 75 LETRONNE, FLAMSTO											
L 3	1	194	2.785	43.41W	91 ***	052414	2-22-67	LUNAR ORB HI, 610MM B&W	- NONE	54K	88525	195	12.7 19	- . 9		
		CAM-NAD.=	2.395	43.29W	SWING= 355.	PHASE= 68.		EMIS-ANG.= 13.	CAM-RAD.=	1793.2 KM.		SUN	AZH= 90.6			
				N. W. PART OF	LAC 75 LETRONNE, FLAMSTO											
L 3	2	194	2.785	43.40W	91 ***	052415	2-22-67	LUNAR ORB LO, F=80MM B&W	- NONE	54K	675000	196	12.7 19	- .88		
		CAM-NAD.=	2.395	43.28W	SWING= 355.	PHASE= 68.		EMIS-ANG.= 13.	CAM-RAD.=	1793.2 KM.		SUN	AZH= 90.6			
				N. W. PART OF	LAC 75 LETRONNE, FLAMSTO											

HIS SUN	MAG ROLL	FR, PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR (I=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE M=N.MI K=KM.	SCALE AT PRIN. PT.	TILT AZ	SUN SIDE, ANG. FR. VERT	ANG. ANG. LAP	SUN FAD. S.
L 3	1	195	2.835	43.26W	91 ***	052417	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	54K	88525	195	12.7 19	- . 9	
		CAM-NAD.=	2.445	43.16W		SWING= 354.		PHASE= 68.		EMIS-ANG.= 13.		CAM-RAD.=	1793.2 KM.	SUN AZM= 90.5	
				N. W. PART OF				LAC 75 LETRONNE, FLAMSTO							
L 3	2	195	2.835	43.26W	91 ***	052417	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	54K	675000	195	12.7 19	- . 88	
		CAM-NAD.=	2.445	43.15W		SWING= 355.		PHASE= 68.		EMIS-ANG.= 13.		CAM-RAD.=	1793.2 KM.	SUN AZM= 90.5	
				N. W. PART OF				LAC 75 LETRONNE, FLAMSTO							
L 3	1	196	2.885	43.12W	91 ***	052419	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	54K	88525	194	12.8 19	- . 9	
		CAM-NAD.=	2.495	43.02W		SWING= 354.		PHASE= 68.		EMIS-ANG.= 13.		CAM-RAD.=	1793.2 KM.	SUN AZM= 90.5	
				N. W. PART OF				LAC 75 LETRONNE, FLAMSTO							
L 3	2	196	2.885	43.12W	91 ***	052419	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	54K	675000	194	12.7 19	- . 88	
		CAM-NAD.=	2.495	43.01W		SWING= 354.		PHASE= 68.		EMIS-ANG.= 13.		CAM-RAD.=	1793.2 KM.	SUN AZM= 90.5	
				N. W. PART OF				LAC 75 LETRONNE, FLAMSTO							
L 3	1	197	2.945	42.98W	91 ***	052422	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	54K	88525	194	12.8 19	- . 9	
		CAM-NAD.=	2.545	42.88W		SWING= 353.		PHASE= 68.		EMIS-ANG.= 13.		CAM-RAD.=	1793.2 KM.	SUN AZM= 90.5	
				N. W. PART OF				LAC 75 LETRONNE, FLAMSTO							
L 3	2	197	2.945	42.97W	91 ***	052422	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	54K	675000	194	12.7 19	- . 88	
		CAM-NAD.=	2.545	42.87W		SWING= 353.		PHASE= 68.		EMIS-ANG.= 13.		CAM-RAD.=	1793.2 KM.	SUN AZM= 90.5	
				N. W. PART OF				LAC 75 LETRONNE, FLAMSTO							
L 3	1	198	2.995	42.84W	91 ***	052424	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	54K	88525	193	12.8 19	- . 10	
		CAM-NAD.=	2.595	42.75W		SWING= 352.		PHASE= 68.		EMIS-ANG.= 13.		CAM-RAD.=	1793.2 KM.	SUN AZM= 90.5	
				N. W. PART OF				LAC 75 LETRONNE, FLAMSTO							
L 3	2	198	2.995	42.83W	91 ***	052424	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	54K	675000	193	12.7 19	- . 88	
		CAM-NAD.=	2.595	42.74W		SWING= 353.		PHASE= 68.		EMIS-ANG.= 13.		CAM-RAD.=	1793.2 KM.	SUN AZM= 90.5	
				N. W. PART OF				LAC 75 LETRONNE, FLAMSTO							
L 3	1	199	3.045	42.70W	91 ***	052426	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	55K	90164	192	12.8 19	- . 9	
		CAM-NAD.=	2.645	42.61W		SWING= 352.		PHASE= 68.		EMIS-ANG.= 13.		CAM-RAD.=	1794.2 KM.	SUN AZM= 90.4	
				N. W. PART OF				LAC 75 LETRONNE, FLAMSTO							
L 3	2	199	3.045	42.69W	91 ***	052427	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	55K	687500	193	12.7 19	- . 88	
		CAM-NAD.=	2.655	42.60W		SWING= 352.		PHASE= 68.		EMIS-ANG.= 13.		CAM-RAD.=	1794.2 KM.	SUN AZM= 90.4	
				N. W. PART OF				LAC 75 LETRONNE, FLAMSTO							
L 3	1	200	3.105	42.56W	91 ***	052429	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	55K	90164	192	12.8 19	- . 10	
		CAM-NAD.=	2.695	42.48W		SWING= 351.		PHASE= 68.		EMIS-ANG.= 13.		CAM-RAD.=	1794.2 KM.	SUN AZM= 90.4	
				N. W. PART OF				LAC 75 LETRONNE, FLAMSTO							
L 3	2	200	3.105	42.55W	91 ***	052429	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	55K	687500	192	12.8 19	- . 88	
		CAM-NAD.=	2.705	42.46W		SWING= 351.		PHASE= 68.		EMIS-ANG.= 13.		CAM-RAD.=	1794.2 KM.	SUN AZM= 90.4	
				N. W. PART OF				LAC 75 LETRONNE, FLAMSTO							

MIS SION	MAG ROLL	FR. OR MAIN	PHOTO OR LAT.	PHIN. LAT.	PT. LONG.	ORB #	GET TIMES=HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.M K=KM.	SCALE AT PRIN. PT.	TILT AZ	TILT ANG.	SUN SIDE, ANG. FWD. LAP S, 8
L 3	1	201	3.215	43.47N	92 00 00	085312	2-22-67	LUNAR	ORB HI, 610MM B&W	- NONE	56K	91803	190	4.6 20	-1.00	
CAM.NAD.= 3.075 43.45W SWING= 350. PHASE= 69. EMIS.ANG.= 5. N. W. PART OF LAC 75 LETRONNE-FLAMSTO																
L 3	2	201	3.215	43.47W	92 00 00	085312	2-22-67	LUNAR	ORB LO.F=80MM B&W	- NONE	56K	700000	191	4.5 20	-1.00	
CAM.NAD.= 3.075 43.44W SWING= 350. PHASE= 69. EMIS.ANG.= 5. N. W. PART OF LAC 75 LETRONNE-FLAMSTO																
L 3	1	202	3.265	43.34N	92 00 00	085315	2-22-67	LUNAR	ORB HI, 610MM B&W	- NONE	56K	91803	188	4.6 20	-1.12	
CAM.NAD.= 3.125 43.31W SWING= 348. PHASE= 69. EMIS.ANG.= 5. N. W. PART OF LAC 75 LETRONNE-FLAMSTO																
L 3	2	202	3.265	43.33W	92 00 00	085315	2-22-67	LUNAR	ORB LO.F=80MM B&W	- NONE	56K	700000	189	4.5 20	-1.08	
CAM.NAD.= 3.125 43.31W SWING= 349. PHASE= 69. EMIS.ANG.= 5. N. W. PART OF LAC 75 LETRONNE-FLAMSTO																
L 3	1	203	3.315	43.20W	92 00 00	085317	2-22-67	LUNAR	ORB HI, 610MM B&W	- NONE	56K	91803	186	4.6 21	-1.10	
CAM.NAD.= 3.175 43.18W SWING= 346. PHASE= 69. EMIS.ANG.= 5. N. W. PART OF LAC 75 LETRONNE-FLAMSTO																
L 3	2	203	3.315	43.19W	92 00 00	085317	2-22-67	LUNAR	ORB LO.F=80MM B&W	- NONE	56K	700000	187	4.6 21	-1.08	
CAM.NAD.= 3.175 43.17W SWING= 347. PHASE= 69. EMIS.ANG.= 5. N. W. PART OF LAC 75 LETRONNE-FLAMSTO																
L 3	1	204	3.375	43.05W	92 00 00	085319	2-22-67	LUNAR	ORB HI, 610MM B&W	- NONE	56K	91803	184	4.7 21	-1.08	
CAM.NAD.= 3.225 43.04W SWING= 344. PHASE= 69. EMIS.ANG.= 5. N. W. PART OF LAC 75 LETRONNE-FLAMSTO																
L 3	2	204	3.375	43.05W	92 00 00	085320	2-22-67	LUNAR	ORB LO.F=80MM B&W	- NONE	56K	700000	185	4.6 21	-1.87	
CAM.NAD.= 3.225 43.03W SWING= 345. PHASE= 69. EMIS.ANG.= 5. N. W. PART OF LAC 75 LETRONNE-FLAMSTO																
L 3	1	205	2.165	44.79N	93 00 00	122142	2-22-67	LUNAR	ORB HI, 610MM B&W	- NONE	56K	91803	21	29.8 21	-1.00	
CAM.NAD.= 3.155 45.19W SWING= 181. PHASE= 83. EMIS.ANG.= 31. NORTHERN PART OF LAC 75 LETRONNE-FLAMSTO																
L 3	2	205	2.165	44.79W	93 00 00	122142	2-22-67	LUNAR	ORB LO.F=80MM B&W	- NONE	56K	700000	21	29.9 21	-1.00	
CAM.NAD.= 3.155 45.18W SWING= 181. PHASE= 82. EMIS.ANG.= 31. NORTHERN PART OF LAC 75 LETRONNE-FLAMSTO																
L 3	1	206	2.225	44.62N	93 00 00	122145	2-22-67	LUNAR	ORB HI, 610MM B&W	- NONE	56K	91803	22	29.8 21	-1.09	
CAM.NAD.= 3.215 45.03W SWING= 181. PHASE= 83. EMIS.ANG.= 31. NORTHERN PART OF LAC 75 LETRONNE-FLAMSTO																
L 3	2	206	2.215	44.62W	93 00 00	122145	2-22-67	LUNAR	ORB LO.F=80MM B&W	- NONE	56K	700000	22	29.9 21	-1.08	
CAM.NAD.= 3.215 45.02W SWING= 181. PHASE= 82. EMIS.ANG.= 31. NORTHERN PART OF LAC 75 LETRONNE-FLAMSTO																

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR M SEC (ESTIMATED)	GMI M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=N.MI PT. K=KM.	T I L T AZ ANG. ANG. FR. VERT	SUN SIDE. F&D. LAP R. R
L 3	1	207	2.28S 44.46W	93 ***	****	122148	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	56K 91803	22 29.8 21	-. 9
		CAM.NAD.=	3.27S 44.87W			SWING= 182.		PHASE= 83.	EMIS.ANG.= 31.	CAM.RAD.=	1795.2 KM.	SUN AZM= 90.6
			NORTHERN PART OF LAC 75 LETHONNE, FLAHSID									
L 3	2	207	2.27S 44.45W	93 ***	****	122148	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	56K 700000	22 29.9 21	-.88
		CAM.NAD.=	3.27S 44.86W			SWING= 181.		PHASE= 82.	EMIS.ANG.= 31.	CAM.RAD.=	1795.2 KM.	SUN AZM= 90.6
			NORTHERN PART OF LAC 75 LETHONNE, FLAHSID									
L 3	1	208	2.34S 44.29W	93 ***	****	122151	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	57K 93443	22 29.9 21	-. 9
		CAM.NAD.=	3.33S 44.71W			SWING= 182.		PHASE= 83.	EMIS.ANG.= 31.	CAM.RAD.=	1796.2 KM.	SUN AZM= 90.6
			NORTHERN PART OF LAC 75 LETHONNE, FLAHSID									
L 3	2	208	2.33S 44.28W	93 ***	****	122151	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	57K 712500	22 29.9 21	-.88
		CAM.NAD.=	3.33S 44.70W			SWING= 182.		PHASE= 82.	EMIS.ANG.= 31.	CAM.RAD.=	1796.2 KM.	SUN AZM= 90.6
			NORTHERN PART OF LAC 75 LETHONNE, FLAHSID									
L 3	1	209	2.40S 44.12W	93 ***	****	122153	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	57K 93443	23 29.9 21	-. 9
		CAM.NAD.=	3.39S 44.55W			SWING= 182.		PHASE= 83.	EMIS.ANG.= 31.	CAM.RAD.=	1796.2 KM.	SUN AZM= 90.6
			NORTHERN PART OF LAC 75 LETHONNE, FLAHSID									
L 3	2	209	2.39S 44.12W	93 ***	****	122154	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	57K 712500	22 29.9 21	-.87
		CAM.NAD.=	3.39S 44.54W			SWING= 182.		PHASE= 82.	EMIS.ANG.= 31.	CAM.RAD.=	1796.2 KM.	SUN AZM= 90.6
			NORTHERN PART OF LAC 75 LETHONNE, FLAHSID									
L 3	1	210	2.46S 43.95W	93 ***	****	122156	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	57K 91443	23 29.9 22	-. 9
		CAM.NAD.=	3.45S 44.39W			SWING= 183.		PHASE= 83.	EMIS.ANG.= 31.	CAM.RAD.=	1796.2 KM.	SUN AZM= 90.6
			NORTHERN PART OF LAC 75 LETHONNE, FLAHSID									
L 3	2	210	2.45S 43.95W	93 ***	****	122156	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	57K 712500	23 29.9 22	-.88
		CAM.NAD.=	3.45S 44.38W			SWING= 182.		PHASE= 82.	EMIS.ANG.= 31.	CAM.RAD.=	1796.2 KM.	SUN AZM= 90.6
			NORTHERN PART OF LAC 75 LETHONNE, FLAHSID									
L 3	1	211	2.52S 43.79W	93 ***	****	122159	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	57K 93443	23 29.9 22	-. 8
		CAM.NAD.=	3.51S 44.22W			SWING= 183.		PHASE= 83.	EMIS.ANG.= 31.	CAM.RAD.=	1796.2 KM.	SUN AZM= 90.5
			NORTHERN PART OF LAC 75 LETHONNE, FLAHSID									
L 3	2	211	2.52S 43.78W	93 ***	****	122159	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	57K 712500	23 29.9 22	-.87
		CAM.NAD.=	3.51S 44.21W			SWING= 183.		PHASE= 82.	EMIS.ANG.= 31.	CAM.RAD.=	1796.2 KM.	SUN AZM= 90.5
			NORTHERN PART OF LAC 75 LETHONNE, FLAHSID									
L 3	1	212	2.58S 43.62W	93 ***	****	122202	2-22-67	LUNAR ORB HI. 610MM B&W	- NONE	57K 93443	23 29.9 22	-. 9
		CAM.NAD.=	3.57S 44.06W			SWING= 183.		PHASE= 83.	EMIS.ANG.= 31.	CAM.RAD.=	1796.2 KM.	SUN AZM= 90.5
			NORTHERN PART OF LAC 75 LETHONNE, FLAHSID									
L 3	2	212	2.58S 43.61W	93 ***	****	122202	2-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	57K 712500	23 29.9 22	-.87
		CAM.NAD.=	3.57S 44.05W			SWING= 183.		PHASE= 82.	EMIS.ANG.= 31.	CAM.RAD.=	1796.2 KM.	SUN AZM= 90.5
			NORTHERN PART OF LAC 75 LETHONNE, FLAHSID									



HIS	HAG	FR, PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDE,				
SION ROLL	OR	LAT.	N	TIMES-HR	M	SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.				
"	"	MAIN	LONG.	(ESTIMATED)				TYPE		M=N.MI	PT.	FR.	LAP				
										K=KM.		VERT	% B				
L 4	1	132	9.14S	29.59W	24	00	0000	172507	5-20-67 LUNAR ORB HI. 610MM B&W	-	NONE	2717K	4454098	1	3.4	19	-0.50
		CAM. RAD. = 14.42S		29.69W	SWING = 188.		PHASE = 72.		EMIS. ANG. = 9.		CAM. RAD. = 4456.2 KM.		SUN AZM = 86.2				
		LAC 76 RIPHAEUS M. FRAU MAURO				LAC 75 LETRONNE, FLAMSTD				LAC 93 M. HUMOR., GASSENDI		6		LAC 94 PITATUS, M. NU			
L 4	2	134	46.31N	18.14W	24	00	0000	182759	5-20-67 LUNAR ORB LO. F=80MM B&W	-	NONE	2879K	35987500	53	3.7	21	-0.39
		CAM. RAD. = 42.80N		25.31W	SWING = 218.		PHASE = 74.		EMIS. ANG. = 10.		CAM. RAD. = 4618.2 KM.		SUN AZM = 113.2				
		LAC 24 SINUS IRIU ;		W>1/2 MOON SPHERE ;		LAC 75 LETRONNE, F ;		LAC 1 N. POLE NEAR SIDE BYRD, PFARY		580 N		6		LAC 14 ENDYMION, STRA			
L 4	1	137	14.98S	35.28W	25	00	0000	052651	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	2718K	4455738	119	7	19	-0.48
		CAM. RAD. = 14.40S		36.33W	SWING = 305.		PHASE = 73.		EMIS. ANG. = 2.		CAM. RAD. = 4457.2 KM.		SUN AZM = 84.1				
		EASTERN PART OF LAC 75 LETRONNE, F ;		EASTERN PART OF LAC 93 M. HUMOR., GASSENDI		6		LAC 94 PITATUS, M. NUBIUM									
L 4	2	137	14.77S	35.29W	25	00	0000	052651	5-21-67 LUNAR ORB LO. F=80MM B&W	-	NONE	2718K	33975000	119	7	19	-0.00
		CAM. RAD. = 14.40S		36.34W	SWING = 305.		PHASE = 73.		EMIS. ANG. = 2.		CAM. RAD. = 4457.2 KM.		SUN AZM = 84.1				
		LAC 75 LETRONNE, F ;		W>1/2 MOON SPHERE ;		LAC 136 BAILLEY, K ;		LAC 139 HELMHOLTZ, HALE		6		LAC 141 RAYLEIGH					
L 4	1	138	13.70N	36.45W	25	00	0000	055724	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	2671K	4376689	263	1.3	18	-0.13
		CAM. RAD. = 13.92N		34.43W	SWING = 78.		PHASE = 68.		EMIS. ANG. = 3.		CAM. RAD. = 4410.2 KM.		SUN AZM = 94.0				
		EASTERN PART OF LAC 57 KEPLER, ENCKE		EASTERN PART OF LAC 39 ARISTARCHU		6		NORTHERN PART OF LAC 75 LETRONNE, FLA									
L 4	1	143	14.30S	41.41W	26	00	0000	172822	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	2719K	4457377	85	1.0	19	-0.47
		CAM. RAD. = 14.41S		42.98W	SWING = 271.		PHASE = 74.		EMIS. ANG. = 3.		CAM. RAD. = 4458.2 KM.		SUN AZM = 84.3				
		CENTRAL PART OF LAC 75 LETRONNE, FLAMSTD		CENTRAL PART OF LAC 93 M. HUMOR., GASSENDI		6		S. W. PART OF LAC 57 KEPLER, ENCKE									
L 4	2	143	14.29S	41.41W	26	00	0000	172822	5-21-67 LUNAR ORB LO. F=80MM B&W	-	NONE	2719K	33987500	85	1.0	19	-0.8
		CAM. RAD. = 14.41S		42.98W	SWING = 271.		PHASE = 74.		EMIS. ANG. = 3.		CAM. RAD. = 4458.2 KM.		SUN AZM = 84.3				
		LAC 75 LETRONNE, F ;		W>1/2 MOON SPHERE ;		LAC 128 BIELA, WAT ;		LAC 23 RUNKER, SHARP		6		LAC 41 APENNINES, HAE					
L 4	1	144	14.03N	41.76W	26	00	0000	175854	5-21-67 LUNAR ORB HI. 610MM B&W	-	NONE	2669K	4375410	280	5	19	-0.30
		CAM. RAD. = 13.90N		41.01W	SWING = 94.		PHASE = 70.		EMIS. ANG. = 1.		CAM. RAD. = 4408.2 KM.		SUN AZM = 94.3				
		CENTRAL PART OF LAC 57 KEPLER, ENCKE		CENTRAL PART OF LAC 39 ARISTARCHU		6		N. W. PART OF LAC 75 LETRONNE, FLA									
L 4	1	149	15.05S	48.76W	27	00	0000	052940	5-22-67 LUNAR ORB HI. 610MM B&W	-	NONE	2720K	4459016	127	7	18	-0.49
		CAM. RAD. = 14.40S		49.64W	SWING = 313.		PHASE = 74.		EMIS. ANG. = 2.		CAM. RAD. = 4459.2 KM.		SUN AZM = 84.4				
		LAC 75 LETRONNE, F ;		LAC 74 GRIMALDI, B ;		LAC 92 BYRGIUS, DA ;		LAC 93 M. HUMOR., GASSENDI		6		LAC 56 HEVELIUS, REIN					
L 4	2	149	15.05S	48.76W	27	00	0000	052940	5-22-67 LUNAR ORB LO. F=80MM B&W	-	NONE	2720K	34000000	127	7	18	-0.88
		CAM. RAD. = 14.40S		49.64W	SWING = 313.		PHASE = 74.		EMIS. ANG. = 2.		CAM. RAD. = 4459.2 KM.		SUN AZM = 84.4				
		LAC 75 LETRONNE, F ;		W>1/2 MOON SPHERE ;		LAC 136 BAILLEY, K ;		LAC 38 SELEUCUS, SCHROTER V.		6		LAC 25 CASSINI, ALPS					
L 4	1	150	12.70N	49.29W	27	00	0000	060012	5-22-67 LUNAR ORB HI. 610MM B&W	-	NONE	2668K	4373770	234	1.3	18	-0.23
		CAM. RAD. = 13.91N		47.59W	SWING = 48.		PHASE = 70.		EMIS. ANG. = 3.		CAM. RAD. = 4407.2 KM.		SUN AZM = 93.5				
		LAC 57 KEPLER, ENCKE ;		LAC 56 HEVELIUS, R ;		LAC 39 ARISTARCHU ;		LAC 38 SELEUCUS, SCHROTER V.		6		LAC 75 LETRONNE, FLAM					
L 4	2	167	42.01S	60.70W	30	00	0000	170012	5-23-67 LUNAR ORB LO. F=80MM B&W	-	NONE	3009K	37612500	95	5.0	17	-0.00
		CAM. RAD. = 41.02S		72.48W	SWING = 292.		PHASE = 86.		EMIS. ANG. = 14.		CAM. RAD. = 4748.2 KM.		SUN AZM = 72.4				
		LAC 115 SCHICKARD, LACROIX		W>1/2 MOON SPHERE		LAC 144 SCOTT, S. POLK NEAR SIDE		6		LAC 55 VASCO DE GAMMA							

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. *	ORB TIMES=HH M SEC (ESTIMATED)	GET GMT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. M=N.MI K=KM.	TILT AZ	SUN ANG.	SIDE, ANG. FR. VERT	FAD. LAP R. R
L 5	1	169	3.975	36.30W	71	000 0000	072333	8-17-67	LUNAR ORB HI. 610MM B&W	- NONE	105K	172131	265	7.9 15	- .00	
		CAM-NAD.=	3.945	35.83W		SWING= 171.	PHASE= 67.		EMIS-ANG.= 8.	CAM-RAD.=	1844.2 KM.		SUN AZM= 87.5			
N. E. PART OF LAC 75 LETRONNE, FLAMSTO																
L 5	2	169	3.965	36.31W	71	000 0000	072333	8-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	105K	1312500	266	8.0 15	- .00	
		CAM-NAD.=	3.935	35.83W		SWING= 172.	PHASE= 67.		EMIS-ANG.= 8.	CAM-RAD.=	1844.2 KM.		SUN AZM= 87.5			
N. E. PART OF LAC 75 LETRONNE, FLAMSTO																
L 5	1	170	3.065	36.28W	71	000 0000	072338	8-17-67	LUNAR ORB HI. 610MM B&W	- NONE	105K	172131	267	7.8 15	- .6	
		CAM-NAD.=	3.065	35.80W		SWING= 173.	PHASE= 67.		EMIS-ANG.= 8.	CAM-RAD.=	1844.2 KM.		SUN AZM= 87.5			
N. E. PART OF LAC 75 LETRONNE, FLAMSTO																
L 5	2	170	3.075	36.29W	71	000 0000	072338	8-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	105K	1312500	268	8.0 15	- .87	
		CAM-NAD.=	3.055	35.80W		SWING= 174.	PHASE= 67.		EMIS-ANG.= 8.	CAM-RAD.=	1844.2 KM.		SUN AZM= 87.6			
N. E. PART OF LAC 75 LETRONNE, FLAMSTO																
L 5	1	171	3.395	36.25W	71	000 0000	072343	8-17-67	LUNAR ORB HI. 610MM B&W	- NONE	105K	172131	269	7.8 15	- .7	
		CAM-NAD.=	3.385	35.78W		SWING= 175.	PHASE= 67.		EMIS-ANG.= 8.	CAM-RAD.=	1844.2 KM.		SUN AZM= 87.6			
N. E. PART OF LAC 75 LETRONNE, FLAMSTO																
L 5	2	171	3.385	36.26W	71	000 0000	072343	8-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	105K	1312500	270	7.9 15	- .87	
		CAM-NAD.=	3.385	35.78W		SWING= 176.	PHASE= 67.		EMIS-ANG.= 8.	CAM-RAD.=	1844.2 KM.		SUN AZM= 87.6			
N. E. PART OF LAC 75 LETRONNE, FLAMSTO																
L 5	1	172	3.105	36.23W	71	000 0000	072348	8-17-67	LUNAR ORB HI. 610MM B&W	- NONE	105K	172131	271	7.8 15	- .8	
		CAM-NAD.=	3.115	35.76W		SWING= 177.	PHASE= 67.		EMIS-ANG.= 8.	CAM-RAD.=	1844.2 KM.		SUN AZM= 87.7			
N. E. PART OF LAC 75 LETRONNE, FLAMSTO																
L 5	2	172	3.095	36.24W	71	000 0000	072348	8-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	105K	1312500	272	7.9 15	- .88	
		CAM-NAD.=	3.105	35.76W		SWING= 178.	PHASE= 67.		EMIS-ANG.= 8.	CAM-RAD.=	1844.2 KM.		SUN AZM= 87.7			
N. E. PART OF LAC 75 LETRONNE, FLAMSTO																
L 5	1	173	3.855	36.44W	72	000 0000	103435	8-17-67	LUNAR ORB HI. 610MM B&W	- NONE	105K	172131	97	18.0 16	- .00	
		CAM-NAD.=	3.705	37.56W		SWING= 3.	PHASE= 92.		EMIS-ANG.= 19.	CAM-RAD.=	1844.2 KM.		SUN AZM= 87.4			
N. E. PART OF LAC 75 LETRONNE, FLAMSTO																
L 5	2	173	3.845	36.45W	72	000 0000	103435	8-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	105K	1312500	97	17.8 16	- .00	
		CAM-NAD.=	3.705	37.56W		SWING= 3.	PHASE= 92.		EMIS-ANG.= 19.	CAM-RAD.=	1844.2 KM.		SUN AZM= 87.4			
N. E. PART OF LAC 75 LETRONNE, FLAMSTO																
L 5	1	174	3.555	36.42W	72	000 0000	103440	8-17-67	LUNAR ORB HI. 610MM B&W	- NONE	105K	172131	96	18.0 16	- .7	
		CAM-NAD.=	3.425	37.54W		SWING= 3.	PHASE= 92.		EMIS-ANG.= 19.	CAM-RAD.=	1844.2 KM.		SUN AZM= 87.5			
N. E. PART OF LAC 75 LETRONNE, FLAMSTO																
L 5	2	174	3.545	36.43W	72	000 0000	103440	8-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	105K	1312500	96	17.8 16	- .87	
		CAM-NAD.=	3.415	37.54W		SWING= 3.	PHASE= 92.		EMIS-ANG.= 19.	CAM-RAD.=	1844.2 KM.		SUN AZM= 87.5			
N. E. PART OF LAC 75 LETRONNE, FLAMSTO																

S	HIS	MAG	FR. PHOTO OR LAT.	PRIN. PT. OR LAT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	TILT AZ	TILT ANG. FR. VERT	SUN SIDE, ANG. FWD. LAP	
																SWING
L 5	1	175	3.255	36.40W	72	000	0000	103445	8-17-67 LUNAR ORB HI. 610MM B&W	- NONE	105K	172131	95	17.9	16	- .8
CAM. RAD. = 1844.2 KM. SUN AZM = 87.6																
N. E. PART OF LAC 75 LETRONNE, FLAMSTD																
L 5	2	175	3.245	36.40W	72	000	0000	103445	8-17-67 LUNAR ORB LO.F=80MM B&W	- NONE	105K	1312500	95	17.8	16	- .88
CAM. RAD. = 1844.2 KM. SUN AZM = 87.6																
N. E. PART OF LAC 75 LETRONNE, FLAMSTD																
L 5	1	176	2.955	36.37W	72	000	0000	103450	8-17-67 LUNAR ORB HI. 610MM B&W	- NONE	105K	172131	95	17.9	16	- .9
CAM. RAD. = 1844.2 KM. SUN AZM = 87.6																
N. E. PART OF LAC 75 LETRONNE, FLAMSTD																
L 5	2	176	2.945	36.38W	72	000	0000	103450	8-17-67 LUNAR ORB LO.F=80MM B&W	- NONE	105K	1312500	94	17.8	16	- .88
CAM. RAD. = 1844.2 KM. SUN AZM = 87.6																
N. E. PART OF LAC 75 LETRONNE, FLAMSTD																
L 5	1	179	16.215	39.97W	73	000	0000	134154	8-17-67 LUNAR ORB HI. 610MM B&W	- NONE	124K	203279	109	5.7	14	- .00
CAM. RAD. = 1863.2 KM. SUN AZM = 84.5																
NORTHERN PART OF LAC 93 M. HUMOR., GASSENDI																
L 5	2	179	16.205	39.97W	73	000	0000	134154	8-17-67 LUNAR ORB LO.F=80MM B&W	- NONE	124K	1550000	109	5.6	14	- .52
CAM. RAD. = 1863.2 KM. SUN AZM = 84.5																
NORTHERN PART OF LAC 93 M. HUMOR., GASSENDI																
L 5	1	180	14.845	39.86W	73	000	0000	134217	8-17-67 LUNAR ORB HI. 610MM B&W	- NONE	122K	200000	98	5.5	14	- .00
CAM. RAD. = 1861.2 KM. SUN AZM = 84.8																
SOUTHERN PART OF LAC 75 LETRONNE, FLAMSTD																
L 5	2	180	14.835	39.87W	73	000	0000	134217	8-17-67 LUNAR ORB LO.F=80MM B&W	- NONE	122K	1525000	98	5.4	14	- .51
CAM. RAD. = 1861.2 KM. SUN AZM = 84.8																
SOUTHERN PART OF LAC 75 LETRONNE, FLAMSTD																
6 NORTHERN PART OF LAC 93 M. HUMOR., GASSENDI																

TOTAL PHOTOS IN THIS GROUP = 161

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B = BRACKET MOUNTED; G = CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT = EKTAR 2.8 LENS;  
 HSB = HASSELBLAD; MAUR = MAURER; ZP, ZB, ZS = ZEISS LENS (PLANAR, BIOGEN, SONAR); FOCAL LENGTH (MM) & MAX. F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG N	FR. PHOTO OR MAIN	PRIN. PT. LAT.	ORB N	GET TIMES-HR	GHT H SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	M-EXPOSURE AND FILTER	ALTITUDE =N.MI K=KM.	SCALE AT PRIN. PT.	TILT SUN SIDE				FAD. LAP S. R
												FR.	VERT	ANG.	ANG.	
L 1	2	137	1.25N 19.83W	78	0000	061431	8-26-66	LUNAR ORB LO.F=80MM B&W	- NONE	53K	662500	258	44.2	11	-0.00	
CAM.NAD.= 1.59N 18.15W SWING= 70. PHASE= 34. EMIS.ANG.= 46. CAM.RAD.= 1792.2 KM. SUN AZM= 88.7																
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART LAC 76 RIPHAeus MT, FRAU MAURO																
L 1	2	139	0.27N 19.27W	81	0000	163439	8-26-66	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	193	12.1	17	-0.00	
CAM.NAD.= .59N 19.19W SWING= 11. PHASE= 70. EMIS.ANG.= 13. CAM.RAD.= 1785.2 KM. SUN AZM= 88.5																
S. E. PART OF LAC 58 COPERNICUS, REINHOLD & N. E. PART OF LAC 76 RIPHAeus MT, FRAU MAURO																
L 1	2	140	0.10N 20.19W	82	0000	200112	8-26-66	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	190	10.7	18	-0.00	
CAM.NAD.= .38N 20.14W SWING= 8. PHASE= 70. EMIS.ANG.= 11. CAM.RAD.= 1785.2 KM. SUN AZM= 88.4																
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																
L 1	2	149	0.19N 24.27W	84	0000	025340	8-27-66	LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	195	9.5	17	-0.00	
CAM.NAD.= .44N 24.20W SWING= 14. PHASE= 70. EMIS.ANG.= 10. CAM.RAD.= 1786.2 KM. SUN AZM= 88.5																
S. W. PART OF LAC 58 COPERNICUS, REINHOLD & N. W. PART OF LAC 76 RIPHAeus MT, FRAU MAURO																
L 1	2	151	0.10S 23.69W	86	0000	094725	8-27-66	LUNAR ORB LO.F=80MM B&W	- NONE	44K	550000	1	14.9	21	-0.00	
CAM.NAD.= .49S 23.65W SWING= 189. PHASE= 70. EMIS.ANG.= 15. CAM.RAD.= 1783.2 KM. SUN AZM= 88.3																
N. W. PART OF LAC 76 RIPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																
L 1	2	157	3.06S 23.22W	92	0000	062818	8-28-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	155	1.7	32	-0.00	
CAM.NAD.= 3.02S 23.24W SWING= 323. PHASE= 58. EMIS.ANG.= 2. CAM.RAD.= 1790.2 KM. SUN AZM= 86.3																
N. W. PART OF LAC 76 RIPHAeus MT, FRAU MAURO																
L 1	2	158	3.09S 23.09W	92	0000	062821	8-28-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	152	1.8	32	-0.88	
CAM.NAD.= 3.04S 23.11W SWING= 319. PHASE= 58. EMIS.ANG.= 2. CAM.RAD.= 1790.2 KM. SUN AZM= 86.2																
N. W. PART OF LAC 76 RIPHAeus MT, FRAU MAURO																
L 1	2	159	3.12S 22.95W	92	0000	062823	8-28-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	148	1.9	32	-0.87	
CAM.NAD.= 3.07S 22.98W SWING= 316. PHASE= 58. EMIS.ANG.= 2. CAM.RAD.= 1790.2 KM. SUN AZM= 86.2																
N. W. PART OF LAC 76 RIPHAeus MT, FRAU MAURO																
L 1	2	160	3.14S 22.82W	92	0000	062825	8-28-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	146	2.0	33	-0.88	
CAM.NAD.= 3.10S 22.85W SWING= 313. PHASE= 58. EMIS.ANG.= 2. CAM.RAD.= 1790.2 KM. SUN AZM= 86.2																
N. W. PART OF LAC 76 RIPHAeus MT, FRAU MAURO																

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## LAC 76 RIPHAeus MT, FRAU MAURO

HIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	TILT	SUN SIDE
SUN	ROLL	OR	LAT.	"	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
"	"	MAIN	LONG.	"	(ESTIMATED)			TYPE		M=N.MI	PT.	FR.	LAP
										K=KM.		VERT	R. R
L 1	2	161	3.175	22.68W	92	0000	062827	8-28-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	143	2.1 33 -.87
		CAM.NAD.=	3.125	22.72W			SWING= 311.	PHASE= 58. EMIS.ANG.= 2.	CAM.RAD.=	1790.2 KM.		SUN AZM= 86.7	
							N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO					
L 1	2	162	3.205	22.55W	92	0000	062829	8-28-66 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	141	2.2 33 -.87
		CAM.NAD.=	3.155	22.59W			SWING= 308.	PHASE= 58. EMIS.ANG.= 2.	CAM.RAD.=	1790.2 KM.		SUN AZM= 86.1	
							N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO					
L 1	2	163	3.235	22.41W	92	0000	062831	8-28-66 LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	138	2.3 33 -.87
		CAM.NAD.=	3.185	22.46W			SWING= 306.	PHASE= 58. EMIS.ANG.= 2.	CAM.RAD.=	1791.2 KM.		SUN AZM= 86.1	
							N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO					
L 1	2	164	3.265	22.27W	92	0000	062834	8-28-66 LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	136	2.4 33 -.87
		CAM.NAD.=	3.215	22.32W			SWING= 304.	PHASE= 58. EMIS.ANG.= 2.	CAM.RAD.=	1791.2 KM.		SUN AZM= 86.1	
							N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO					
L 1	2	165	3.295	22.14W	92	0000	062836	8-28-66 LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	135	2.5 33 -.87
		CAM.NAD.=	3.235	22.19W			SWING= 302.	PHASE= 58. EMIS.ANG.= 3.	CAM.RAD.=	1791.2 KM.		SUN AZM= 86.0	
							N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO					
L 1	2	166	3.315	22.00W	92	0000	062838	8-28-66 LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	133	2.6 33 -.87
		CAM.NAD.=	3.265	22.05W			SWING= 301.	PHASE= 58. EMIS.ANG.= 3.	CAM.RAD.=	1791.2 KM.		SUN AZM= 86.0	
							N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO					
L 1	2	167	3.345	21.84W	92	0000	062840	8-28-66 LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	131	2.7 33 -.87
		CAM.NAD.=	3.295	21.92W			SWING= 299.	PHASE= 58. EMIS.ANG.= 3.	CAM.RAD.=	1791.2 KM.		SUN AZM= 86.0	
							N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO					
L 1	2	168	3.375	21.72W	92	0000	062843	8-28-66 LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	130	2.8 34 -.87
		CAM.NAD.=	3.325	21.78W			SWING= 298.	PHASE= 58. EMIS.ANG.= 3.	CAM.RAD.=	1791.2 KM.		SUN AZM= 85.9	
							N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO					
L 1	2	169	3.405	21.58W	92	0000	062845	8-28-66 LUNAR ORB LO.F=80MM B&W	- NONE	53K	662500	129	3.0 34 -.87
		CAM.NAD.=	3.345	21.65W			SWING= 296.	PHASE= 58. EMIS.ANG.= 3.	CAM.RAD.=	1792.2 KM.		SUN AZM= 85.9	
							NORTHERN PART OF	LAC 76 RIPHAeus MT, FRAU MAURO					
L 1	2	170	3.435	21.44W	92	0000	062847	8-28-66 LUNAR ORB LO.F=80MM B&W	- NONE	53K	662500	127	3.1 34 -.87
		CAM.NAD.=	3.375	21.51W			SWING= 295.	PHASE= 58. EMIS.ANG.= 3.	CAM.RAD.=	1792.2 KM.		SUN AZM= 85.9	
							NORTHERN PART OF	LAC 76 RIPHAeus MT, FRAU MAURO					
L 1	2	171	3.465	21.29W	92	0000	062850	8-28-66 LUNAR ORB LO.F=80MM B&W	- NONE	53K	662500	126	3.2 34 -.87
		CAM.NAD.=	3.405	21.37W			SWING= 294.	PHASE= 58. EMIS.ANG.= 3.	CAM.RAD.=	1792.2 KM.		SUN AZM= 85.8	
							NORTHERN PART OF	LAC 76 RIPHAeus MT, FRAU MAURO					
L 1	2	172	3.495	21.15W	92	0000	062852	8-28-66 LUNAR ORB LO.F=80MM B&W	- NONE	53K	662500	125	3.3 34 -.87
		CAM.NAD.=	3.435	21.23W			SWING= 293.	PHASE= 58. EMIS.ANG.= 3.	CAM.RAD.=	1792.2 KM.		SUN AZM= 85.8	
							NORTHERN PART OF	LAC 76 RIPHAeus MT, FRAU MAURO					

SUN	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT		TILT		SUN SIDE,			
										TUDE	PRIN.	AZ	ANG.		ANG.	FWD.	
#	#	#	LAT.	#	#	#	#	#	#	#	M=N.HI K*KM.	PT.	FR.	VERT	#, #		
L 1	2	173	4.53S	22.38W	94	***	0000	132159	8-28-66	LUNAR ORB LO.F=80MM B6W	-	NONE	55K	687500	139	24.3 36	-..
CAM-NAO.= 3.91S 22.92W SWING= 314. PHASE= 70. EMIS-ANG.= 25. CAM-RAD.= 1759.2 KM. SUN AZM= 84.8																	
N. W. PART OF LAC 76 RIPHAeus MT, FRAU MAURO																	
L 2	1	163	0.17N	20.10W	91	***	0000	070350	11-24-66	LUNAR ORB HI. 610MM B6W	-	NONE	51K	83607	108	1.3 28	-..
CAM-NAO.= .19N 20.13W SWING= 277. PHASE= 63. EMIS-ANG.= 1. CAM-RAD.= 1790.2 KM. SUN AZM= 90.5																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																	
L 2	2	163	0.17N	20.09W	91	***	0000	070350	11-24-66	LUNAR ORB LO.F=80MM B6W	-	NONE	51K	637500	103	1.4 28	-..
CAM-NAO.= .18N 20.13W SWING= 272. PHASE= 63. EMIS-ANG.= 1. CAM-RAD.= 1790.2 KM. SUN AZM= 90.6																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																	
L 2	1	164	0.14N	19.96W	91	***	0000	070352	11-24-66	LUNAR ORB HI. 610MM B6W	-	NONE	51K	83607	108	1.5 28	-..
CAM-NAO.= .16N 20.00W SWING= 276. PHASE= 63. EMIS-ANG.= 1. CAM-RAD.= 1790.2 KM. SUN AZM= 90.5																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																	
L 2	2	164	0.15N	19.95W	91	***	0000	070352	11-24-66	LUNAR ORB LO.F=80MM B6W	-	NONE	51K	637500	103	1.5 28	-..
CAM-NAO.= .16N 19.99W SWING= 271. PHASE= 63. EMIS-ANG.= 1. CAM-RAD.= 1790.2 KM. SUN AZM= 90.5																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																	
L 2	1	165	0.11N	19.82W	91	***	0000	070355	11-24-66	LUNAR ORB HI. 610MM B6W	-	NONE	51K	83607	107	1.6 29	-..
CAM-NAO.= .13N 19.86 SWING= 275. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1790.2 KM. SUN AZM= 90.5																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																	
L 2	2	165	0.12N	19.81W	91	***	0000	070355	11-24-66	LUNAR ORB LO.F=80MM B6W	-	NONE	51K	637500	103	1.6 29	-..
CAM-NAO.= .13N 19.86W SWING= 271. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1790.2 KM. SUN AZM= 90.5																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																	
L 2	1	166	0.08N	19.68W	91	***	0000	070357	11-24-66	LUNAR ORB HI. 610MM B6W	-	NONE	52K	85246	107	1.7 29	-..
CAM-NAO.= .10N 19.73W SWING= 275. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1791.2 KM. SUN AZM= 90.5																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																	
L 2	2	166	0.09N	19.67W	91	***	0000	070357	11-24-66	LUNAR ORB LO.F=80MM B6W	-	NONE	52K	650000	103	1.8 29	-..
CAM-NAO.= .10N 19.72W SWING= 271. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1791.2 KM. SUN AZM= 90.5																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																	
L 2	1	167	0.05N	19.53W	91	***	0000	070359	11-24-66	LUNAR ORB HI. 610MM B6W	-	NONE	52K	85246	106	1.9 29	-..
CAM-NAO.= .07N 19.59W SWING= 274. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1791.2 KM. SUN AZM= 90.5																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																	
L 2	2	167	0.06N	19.52W	91	***	0000	070359	11-24-66	LUNAR ORB LO.F=80MM B6W	-	NONE	52K	650000	103	1.9 29	-..
CAM-NAO.= .07N 19.58W SWING= 271. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1791.2 KM. SUN AZM= 90.5																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																	
L 2	1	168	0.02N	19.39W	91	***	0000	070402	11-24-66	LUNAR ORB HI. 610MM B6W	-	NONE	52K	85246	106	2.0 29	-..
CAM-NAO.= .04N 19.45W SWING= 274. PHASE= 63. EMIS-ANG.= 2. CAM-RAD.= 1791.2 KM. SUN AZM= 90.5																	
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																	

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. N	ORB N	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. M=N.MI K=KM.	T I L T AZ	SUN SIDE. ANG. FR. VERT	SUN ANG. FWD. LAP S. S
L 2	2	168	0.03N	19.38W	91	***	070402	11-24-66	LUNAR ORB	LO.F=80MM B&W	- NONE	52K	650000	103	2.1 29	-.87
CAM.NAD.= 0.04N 19.44W SWING= 271. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.5																
SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD & NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																
L 2	1	169	0.01S	19.25W	91	***	070404	11-24-66	LUNAR ORB	HI. 610MM B&W	- NONE	52K	85246	106	2.2 29	-.5
CAM.NAD.= 0.01N 19.31W SWING= 274. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.5																
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																
L 2	2	169	0.01S	19.24W	91	***	070404	11-24-66	LUNAR ORB	LO.F=80MM B&W	- NONE	52K	650000	103	2.2 29	-.87
CAM.NAD.= 0.01N 19.30W SWING= 271. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.5																
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																
L 2	1	170	0.04S	19.10W	91	***	070406	11-24-66	LUNAR ORB	HI. 610MM B&W	- NONE	52K	85246	105	2.3 29	-.4
CAM.NAD.= 0.02S 19.17W SWING= 274. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.4																
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																
L 2	2	170	0.03S	19.09W	91	***	070406	11-24-66	LUNAR ORB	LO.F=80MM B&W	- NONE	52K	650000	103	2.3 29	-.87
CAM.NAD.= 0.02S 19.16W SWING= 271. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.4																
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																
L 2	1	171	0.24S	20.10W	92	***	103254	11-24-66	LUNAR ORB	HI. 610MM B&W	- NONE	54K	88525	104	1.9 30	-.**
CAM.NAD.= 0.22S 20.16W SWING= 272. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1793.2 KM. SUN AZM= 90.3																
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																
L 2	2	171	0.23S	20.10W	92	***	103255	11-24-66	LUNAR ORB	LO.F=80MM B&W	- NONE	54K	675000	100	2.0 30	-.**
CAM.NAD.= 0.22S 20.16W SWING= 269. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1793.2 KM. SUN AZM= 90.3																
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																
L 2	1	172	0.27S	19.96W	92	***	103257	11-24-66	LUNAR ORB	HI. 610MM B&W	- NONE	54K	88525	104	2.1 30	-.5
CAM.NAD.= 0.25S 20.02W SWING= 272. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1793.2 KM. SUN AZM= 90.3																
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																
L 2	2	172	0.27S	19.95W	92	***	103257	11-24-66	LUNAR ORB	LO.F=80MM B&W	- NONE	54K	675000	100	2.1 30	-.87
CAM.NAD.= 0.25S 20.01W SWING= 269. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1793.2 KM. SUN AZM= 90.3																
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																
L 2	1	173	0.30S	19.80W	92	***	103259	11-24-66	LUNAR ORB	HI. 610MM B&W	- NONE	55K	90144	103	2.2 30	-.5
CAM.NAD.= 0.28S 19.87W SWING= 272. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1794.2 KM. SUN AZM= 90.3																
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																
L 2	2	173	0.30S	19.80W	92	***	103259	11-24-66	LUNAR ORB	LO.F=80MM B&W	- NONE	55K	687500	101	2.3 30	-.87
CAM.NAD.= 0.28S 19.87W SWING= 269. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1794.2 KM. SUN AZM= 90.3																
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																
L 2	1	174	0.33S	19.65W	92	***	103302	11-24-66	LUNAR ORB	HI. 610MM B&W	- NONE	55K	90144	103	2.4 31	-.5
CAM.NAD.= 0.31S 19.73W SWING= 271. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 1794.2 KM. SUN AZM= 90.3																
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO																

L	2	MAG	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB	GET TIMES	GHT HR M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE, ANG. FR. VERT	SUN SIDE, ANG. LAP S. R		
L 2	2	174	U-335	19.64W	92	***	****	103302	11-24-66	LUNAR ORB LO.F=80MM B&W	-	NONE	55K	687500	101	2.4 31	-.87
CAM.NAD.= .31S 19.72W SWING= 269. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 1794.2 KM. SUN AZM= 90.3																	
NORTHERN PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO 6 SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 2	1	175	U-365	19.50W	92	***	****	103304	11-24-66	LUNAR ORB HI. 610MM B&W	-	NONE	55K	90164	103	2.5 31	-.5
CAM.NAD.= .34S 19.58W SWING= 271. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 1794.2 KM. SUN AZM= 90.3																	
NORTHERN PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																	
L 2	2	175	U-365	19.49W	92	***	****	103304	11-24-66	LUNAR ORB LO.F=80MM B&W	-	NONE	55K	687500	101	2.6 31	-.87
CAM.NAD.= .34S 19.57W SWING= 269. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 1794.2 KM. SUN AZM= 90.3																	
NORTHERN PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO 6 SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 2	1	176	U-395	19.35W	92	***	****	103307	11-24-66	LUNAR ORB HI. 610MM B&W	-	NONE	56K	91803	103	2.7 31	-.5
CAM.NAD.= .37S 19.43W SWING= 271. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 1795.2 KM. SUN AZM= 90.2																	
NORTHERN PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																	
L 2	2	176	U-395	19.34W	92	***	****	103307	11-24-66	LUNAR ORB LO.F=80MM B&W	-	NONE	56K	700000	101	2.7 31	-.87
CAM.NAD.= .38S 19.42W SWING= 269. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 1795.2 KM. SUN AZM= 90.2																	
NORTHERN PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO 6 SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 2	1	177	U-435	19.19W	92	***	****	103309	11-24-66	LUNAR ORB HI. 610MM B&W	-	NONE	56K	91803	103	2.8 31	-.5
CAM.NAD.= .41S 19.28W SWING= 271. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 1795.2 KM. SUN AZM= 90.2																	
NORTHERN PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																	
L 2	2	177	U-435	19.18W	92	***	****	103309	11-24-66	LUNAR ORB LO.F=80MM B&W	-	NONE	56K	700000	101	2.9 31	-.87
CAM.NAD.= .41S 19.27W SWING= 269. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 1795.2 KM. SUN AZM= 90.2																	
NORTHERN PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO 6 SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 2	1	178	U-465	19.04W	92	***	****	103312	11-24-66	LUNAR ORB HI. 610MM B&W	-	NONE	56K	91803	103	3.0 31	-.5
CAM.NAD.= .44S 19.13W SWING= 271. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 1795.2 KM. SUN AZM= 90.2																	
NORTHERN PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																	
L 2	2	178	U-465	19.03W	92	***	****	103312	11-24-66	LUNAR ORB LO.F=80MM B&W	-	NONE	56K	700000	101	3.0 31	-.87
CAM.NAD.= .44S 19.12W SWING= 269. PHASE= 62. EMIS.ANG.= 3. CAM.RAD.= 1795.2 KM. SUN AZM= 90.2																	
NORTHERN PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO 6 SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 3	1	120	U-735	19.51W	74	***	****	181835	2-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	45K	73770	257	66.2 13	-.00
CAM.NAD.= .03N 19.93W SWING= 27. PHASE= 15. EMIS.ANG.= 70. CAM.RAD.= 1784.2 KM. SUN AZM= 91.3																	
NORTHERN PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO 6 LIMB OR HORIZON																	
L 3	2	120	U-735	19.50W	74	***	****	181835	2-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	45K	562500	258	66.2 13	-.00
CAM.NAD.= .03N 19.92W SWING= 27. PHASE= 15. EMIS.ANG.= 70. CAM.RAD.= 1784.2 KM. SUN AZM= 91.3																	
NORTHERN PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO 6 SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																	
L 3	1	124	U-625	20.10W	77	***	****	044432	2-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	46K	75410	225	62.17	-.00
CAM.NAD.= .62S 20.09W SWING= 24. PHASE= 73. EMIS.ANG.= 0. CAM.RAD.= 1785.2 KM. SUN AZM= 91.3																	
NORTHERN PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																	



MIS SION	MAG ROLL	FR, PHOTO OR	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N, MI K=KM.	SCALE AT PRIN. PT.	T AZ	L ANG.	T ANG.	SUN FWD.	SIDE. LAP R. R
L 3	2	124	0.625	20.09W	77	044432	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	248	.3	17	-.00	
CAM.NAD.= .625 20.09W SWING= 47. PHASE= 72. EMIS.ANG.= 0. CAM.RAD.= 1785.2 KM. SUN AZM= 91.3																
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																
L 3	1	125	0.675	19.98W	77	044434	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	195	.2	17	-.6	
CAM.NAD.= .665 19.98W SWING= 354. PHASE= 73. EMIS.ANG.= 0. CAM.RAD.= 1785.2 KM. SUN AZM= 91.3																
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO																
L 3	2	125	0.675	19.97W	77	044434	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	220	.2	17	-.87	
CAM.NAD.= .675 19.97W SWING= 20. PHASE= 72. EMIS.ANG.= 0. CAM.RAD.= 1785.2 KM. SUN AZM= 91.3																
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO & SOUTHERN PART OF LAC 58 COPERNICUS, REINHOLD																
L 3	1	126	0.725	19.86W	77	044436	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	168	.3	18	-.6	
CAM.NAD.= .715 19.86W SWING= 327. PHASE= 73. EMIS.ANG.= 0. CAM.RAD.= 1785.2 KM. SUN AZM= 91.3																
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO																
L 3	2	126	0.725	19.85W	77	044436	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	180	.2	18	-.87	
CAM.NAD.= .715 19.85W SWING= 340. PHASE= 72. EMIS.ANG.= 0. CAM.RAD.= 1785.2 KM. SUN AZM= 91.3																
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO																
L 3	1	127	0.765	19.74W	77	044438	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	151	.4	18	-.6	
CAM.NAD.= .755 19.75W SWING= 310. PHASE= 73. EMIS.ANG.= 0. CAM.RAD.= 1785.2 KM. SUN AZM= 91.3																
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO																
L 3	2	127	0.765	19.73W	77	044438	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	153	.3	18	-.87	
CAM.NAD.= .765 19.74W SWING= 313. PHASE= 72. EMIS.ANG.= 0. CAM.RAD.= 1785.2 KM. SUN AZM= 91.3																
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO																
L 3	1	128	0.815	19.62W	77	044440	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	141	.5	18	-.6	
CAM.NAD.= .805 19.63W SWING= 300. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1785.2 KM. SUN AZM= 91.3																
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO																
L 3	2	128	0.815	19.62W	77	044440	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	140	.4	18	-.87	
CAM.NAD.= .805 19.62W SWING= 299. PHASE= 72. EMIS.ANG.= 0. CAM.RAD.= 1785.2 KM. SUN AZM= 91.3																
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO																
L 3	1	129	0.865	19.50W	77	044442	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	135	.6	18	-.6	
CAM.NAD.= .855 19.51W SWING= 294. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1785.2 KM. SUN AZM= 91.2																
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO																
L 3	2	129	0.865	19.50W	77	044442	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	132	.5	18	-.87	
CAM.NAD.= .855 19.51W SWING= 292. PHASE= 72. EMIS.ANG.= 1. CAM.RAD.= 1785.2 KM. SUN AZM= 91.2																
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO																
L 3	1	130	0.905	19.40W	77	044444	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	130	.7	18	-.6	
CAM.NAD.= .895 19.40W SWING= 290. PHASE= 73. EMIS.ANG.= 1. CAM.RAD.= 1785.2 KM. SUN AZM= 91.2																
NORTHERN PART OF LAC 76 RHPHAeus MT, FRAU MAURO																

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M-N.MI K-KM.	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE ANG. FR. VERT	SIDE ANG. FR. VERT	FWD. LAP S. R
L 3	2	130	U.945	19.38W	77	***	044444	2-20-67 LUNAR ORB LO.F=80MM B&W	- NDNE	46K	575000	128	.6 18	-.87	
CAM.NAD.= .895 19.39W SWING= 287. PHASE= 72. EMIS.ANG.= 1.															
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO															
L 3	1	131	U.955	19.27W	77	***	044446	2-20-67 LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	127	.8 18	-.6	
CAM.NAD.= .945 19.28W SWING= 287. PHASE= 73. EMIS.ANG.= 1.															
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO															
L 3	2	131	U.955	19.26W	77	***	044446	2-20-67 LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	125	.7 18	-.87	
CAM.NAD.= .945 19.27W SWING= 284. PHASE= 72. EMIS.ANG.= 1.															
NORTHERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO															
L 3	1	132	J.235	17.96W	78	***	081419	2-20-67 LUNAR ORB HI. 610MM B&W	- NONE	46K	75410	201	33.1 21	-.00	
CAM.NAD.= 2.305 17.59W SWING= 1. PHASE= 61. EMIS.ANG.= 34.															
N. E. PART OF LAC 76 RIPHAeus MT, FRAU MAURO															
L 3	2	132	J.235	17.96W	78	***	081419	2-20-67 LUNAR ORB LO.F=80MM B&W	- NONE	46K	575000	202	33.0 21	-.00	
CAM.NAD.= 2.315 17.58W SWING= 1. PHASE= 60. EMIS.ANG.= 34.															
N. E. PART OF LAC 76 RIPHAeus MT, FRAU MAURO															
L 3	1	133	J.465	17.39W	78	***	081429	2-20-67 LUNAR ORB HI. 610MM B&W	- NONE	47K	77049	200	33.1 22	-.00	
CAM.NAD.= 2.525 17.03W SWING= 360. PHASE= 61. EMIS.ANG.= 34.															
N. E. PART OF LAC 76 RIPHAeus MT, FRAU MAURO															
L 3	2	133	J.465	17.38W	78	***	081429	2-20-67 LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	201	33.0 22	-.51	
CAM.NAD.= 2.525 17.02W SWING= 360. PHASE= 60. EMIS.ANG.= 34.															
N. E. PART OF LAC 76 RIPHAeus MT, FRAU MAURO															
L 3	1	134	J.695	16.81W	78	***	081439	2-20-67 LUNAR ORB HI. 610MM B&W	- NONE	47K	77049	199	33.1 22	-.00	
CAM.NAD.= 2.745 16.46W SWING= 358. PHASE= 61. EMIS.ANG.= 34.															
N. E. PART OF LAC 76 RIPHAeus MT, FRAU MAURO															
L 3	2	134	J.695	16.80W	78	***	081439	2-20-67 LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	200	33.0 22	-.50	
CAM.NAD.= 2.745 16.45W SWING= 359. PHASE= 60. EMIS.ANG.= 34.															
N. E. PART OF LAC 76 RIPHAeus MT, FRAU MAURO															
L 3	1	135	J.935	16.22W	78	***	081449	2-20-67 LUNAR ORB HI. 610MM B&W	- NONE	48K	74649	198	33.1 23	-.00	
CAM.NAD.= 2.945 15.88W SWING= 357. PHASE= 61. EMIS.ANG.= 34.															
N. E. PART OF LAC 76 RIPHAeus MT, FRAU MAURO															
L 3	2	135	J.935	16.21W	78	***	081449	2-20-67 LUNAR ORB LO.F=80MM B&W	- NONE	48K	600000	199	33.1 23	-.50	
CAM.NAD.= 2.965 15.87W SWING= 357. PHASE= 60. EMIS.ANG.= 34.															
N. E. PART OF LAC 76 RIPHAeus MT, FRAU MAURO															
L 3	1	136	J.165	23.07W	79	***	114242	2-20-67 LUNAR ORB HI. 610MM B&W	- NONE	47K	77049	252	63.9 10	-.00	
CAM.NAD.= 2.185 19.85W SWING= 14. PHASE= 17. EMIS.ANG.= 67.															
N. E. PART OF LAC 76 RIPHAeus MT, FRAU MAURO															

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HH M SEC (ESTIMATED)	GHI M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. N=N, MI PT. K=KM.	TILT AZ ANG. ANG. FR. VERT	SUN SIDE, FWD. LAP X. X
L 3	2	136	3.16S 23.06W	79	*** 114242	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	253 63.8 18	-1.00
			19.85W		SWING= 14.		PHASE= 17. EMIS.ANG.= 67.	CAM.RAD.=	1786.2 KM.		SUN AZM= 90.5	
			N. W. PART OF LAC 76 RHPHAUS MT, FRAU MAURO									
L 3	1	137	2.92S 23.44W	80	*** 151051	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	201 37.9 19	-1.00
			22.98W		SWING= 0.		PHASE= 62. EMIS.ANG.= 39.	CAM.RAD.=	1788.2 KM.		SUN AZM= 90.5	
			N. W. PART OF LAC 76 RHPHAUS MT, FRAU MAURO									
L 3	2	137	2.92S 23.44W	80	*** 151051	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	201 37.9 19	-1.00
			22.98W		SWING= 1.		PHASE= 62. EMIS.ANG.= 39.	CAM.RAD.=	1788.2 KM.		SUN AZM= 90.5	
			N. W. PART OF LAC 76 RHPHAUS MT, FRAU MAURO									
L 3	1	138	2.98S 23.29W	80	*** 151053	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	201 37.9 19	-1.9
			22.83W		SWING= 0.		PHASE= 62. EMIS.ANG.= 39.	CAM.RAD.=	1788.2 KM.		SUN AZM= 90.5	
			N. W. PART OF LAC 76 RHPHAUS MT, FRAU MAURO									
L 3	2	138	2.98S 23.28W	80	*** 151053	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	201 37.9 19	-1.88
			22.82W		SWING= 0.		PHASE= 62. EMIS.ANG.= 39.	CAM.RAD.=	1788.2 KM.		SUN AZM= 90.5	
			N. W. PART OF LAC 76 RHPHAUS MT, FRAU MAURO									
L 3	1	139	3.05S 23.13W	80	*** 151056	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	200 37.9 20	-1.9
			22.68W		SWING= 360.		PHASE= 62. EMIS.ANG.= 39.	CAM.RAD.=	1788.2 KM.		SUN AZM= 90.5	
			N. W. PART OF LAC 76 RHPHAUS MT, FRAU MAURO									
L 3	2	139	3.04S 23.12W	80	*** 151056	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	200 37.9 20	-1.88
			22.67W		SWING= 360.		PHASE= 62. EMIS.ANG.= 39.	CAM.RAD.=	1788.2 KM.		SUN AZM= 90.5	
			N. W. PART OF LAC 76 RHPHAUS MT, FRAU MAURO									
L 3	1	140	3.11S 22.97W	80	*** 151059	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	200 37.9 20	-1.9
			22.53W		SWING= 360.		PHASE= 62. EMIS.ANG.= 39.	CAM.RAD.=	1788.2 KM.		SUN AZM= 90.4	
			N. W. PART OF LAC 76 RHPHAUS MT, FRAU MAURO									
L 3	2	140	3.11S 22.97W	80	*** 151059	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	200 37.9 20	-1.88
			22.52W		SWING= 360.		PHASE= 62. EMIS.ANG.= 39.	CAM.RAD.=	1788.2 KM.		SUN AZM= 90.4	
			N. W. PART OF LAC 76 RHPHAUS MT, FRAU MAURO									
L 3	1	141	3.17S 22.82W	80	*** 151101	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	200 37.9 20	-1.10
			22.37W		SWING= 359.		PHASE= 62. EMIS.ANG.= 39.	CAM.RAD.=	1788.2 KM.		SUN AZM= 90.4	
			N. W. PART OF LAC 76 RHPHAUS MT, FRAU MAURO									
L 3	2	141	3.17S 22.81W	80	*** 151101	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	200 37.9 20	-1.88
			22.37W		SWING= 359.		PHASE= 62. EMIS.ANG.= 39.	CAM.RAD.=	1788.2 KM.		SUN AZM= 90.4	
			N. W. PART OF LAC 76 RHPHAUS MT, FRAU MAURO									
L 3	1	142	3.23S 22.66W	80	*** 151104	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	49K	80328	200 37.9 20	-1.10
			22.22W		SWING= 359.		PHASE= 62. EMIS.ANG.= 39.	CAM.RAD.=	1788.2 KM.		SUN AZM= 90.4	
			N. W. PART OF LAC 76 RHPHAUS MT, FRAU MAURO									

MIS SION	MAG #	FR. PHOTO OR #	PRIN. PT. LAT. MAIN	ORB #	GET TIMES-HR	GMT M SEC (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N, MI K=KM.	SCALE PRIN. PT.	TILT AZ	SUN SIDE ANG. FR. VERT	ANG. ANG.	FWD. LAP R, R
L 3	2	142	3.235	22.45W	80	***	151104	2-20-67 LUNAR ORB LO, F=80MM B&W	- NONE	49K	612500	200	37.9 20	- .88	
			CAM. RAD.= 2.045	22.21W		SWING= 359.	PHASE= 62.	EMIS. ANG.= 39.	CAM. RAD.=	1788.2 KM.		SUN AZM= 90.4			
						N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO								
L 3	1	143	3.295	22.50W	80	***	151107	2-20-67 LUNAR ORB HI, 610MM B&W	- NONE	49K	80328	199	37.9 20	- .10	
			CAM. RAD.= 2.095	22.07W		SWING= 359.	PHASE= 62.	EMIS. ANG.= 39.	CAM. RAD.=	1788.2 KM.		SUN AZM= 90.3			
						N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO								
L 3	2	143	3.295	22.50W	80	***	151107	2-20-67 LUNAR ORB LO, F=80MM B&W	- NONE	49K	612500	200	37.9 20	- .88	
			CAM. RAD.= 2.105	22.06W		SWING= 359.	PHASE= 62.	EMIS. ANG.= 39.	CAM. RAD.=	1788.2 KM.		SUN AZM= 90.3			
						N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO								
L 3	1	144	3.355	22.35W	80	***	151109	2-20-67 LUNAR ORB HI, 610MM B&W	- NONE	49K	80328	199	38.0 20	- .10	
			CAM. RAD.= 2.155	21.92W		SWING= 358.	PHASE= 62.	EMIS. ANG.= 39.	CAM. RAD.=	1788.2 KM.		SUN AZM= 90.3			
						N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO								
L 3	2	144	3.355	22.34W	80	***	151109	2-20-67 LUNAR ORB LO, F=80MM B&W	- NONE	49K	612500	199	37.9 20	- .88	
			CAM. RAD.= 2.165	21.91W		SWING= 359.	PHASE= 62.	EMIS. ANG.= 39.	CAM. RAD.=	1788.2 KM.		SUN AZM= 90.3			
						N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO								
L 3	1	145	2.705	23.12W	81	***	183952	2-20-67 LUNAR ORB HI, 610MM B&W	- NONE	50K	81967	196	8.6 21	- .00	
			CAM. RAD.= 2.465	23.05W		SWING= 355.	PHASE= 67.	EMIS. ANG.= 9.	CAM. RAD.=	1789.2 KM.		SUN AZM= 90.5			
						N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO								
L 3	2	145	2.705	23.12W	81	***	183952	2-20-67 LUNAR ORB LO, F=80MM B&W	- NONE	50K	625000	196	8.6 21	- .00	
			CAM. RAD.= 2.465	23.05W		SWING= 356.	PHASE= 66.	EMIS. ANG.= 9.	CAM. RAD.=	1789.2 KM.		SUN AZM= 90.5			
						N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO								
L 3	1	146	2.755	23.00W	81	***	183954	2-20-67 LUNAR ORB HI, 610MM B&W	- NONE	50K	81967	195	8.6 21	- .00	
			CAM. RAD.= 2.515	22.93W		SWING= 354.	PHASE= 67.	EMIS. ANG.= 9.	CAM. RAD.=	1789.2 KM.		SUN AZM= 90.5			
						N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO								
L 3	2	146	2.755	22.99W	81	***	183954	2-20-67 LUNAR ORB LO, F=80MM B&W	- NONE	50K	625000	195	8.6 21	- .88	
			CAM. RAD.= 2.515	22.92W		SWING= 355.	PHASE= 66.	EMIS. ANG.= 9.	CAM. RAD.=	1789.2 KM.		SUN AZM= 90.5			
						N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO								
L 3	1	147	2.805	22.87W	81	***	183956	2-20-67 LUNAR ORB HI, 610MM B&W	- NONE	50K	81967	194	8.7 22	- .10	
			CAM. RAD.= 2.565	22.81W		SWING= 354.	PHASE= 67.	EMIS. ANG.= 9.	CAM. RAD.=	1789.2 KM.		SUN AZM= 90.4			
						N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO								
L 3	2	147	2.805	22.86W	81	***	183956	2-20-67 LUNAR ORB LO, F=80MM B&W	- NONE	50K	625000	194	8.6 22	- .88	
			CAM. RAD.= 2.565	22.80W		SWING= 354.	PHASE= 66.	EMIS. ANG.= 9.	CAM. RAD.=	1789.2 KM.		SUN AZM= 90.4			
						N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO								
L 3	1	148	2.855	22.74W	81	***	183958	2-20-67 LUNAR ORB HI, 610MM B&W	- NONE	50K	81967	193	8.7 22	- .10	
			CAM. RAD.= 2.605	22.68W		SWING= 353.	PHASE= 67.	EMIS. ANG.= 9.	CAM. RAD.=	1789.2 KM.		SUN AZM= 90.4			
						N. W. PART OF	LAC 76 RIPHAeus MT, FRAU MAURO								

MIS SION	MAG ROLL	FR. PHOTO UM	PRIN. PT. LAT.	ORB #	GET TIMES-HH M SEC (I=ESTIMATED)	GHT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=N.M1 K=KM.	T I L T A7 ANG. ANG. FR. VERT	SUN SIDE FWD. LAP S. S
L 3	2	148	2.85S 2.60S	22.74N 22.68W	81 *** SWING= 353. N. W. PART OF	183959 2-20-67	LUNAR ORB LO,F=80MM B&W PHASE= 66. EMIS.ANG.= 9. LAC 76 RHPHAeus MT,FRAU MAURO	- NONE CAM.RAD.=	50K 1789.2 KM.	625000 SUN AZH= 90.4	194 8.6 22 - .88
L 3	1	149	2.90S 2.65S	22.62N 22.56W	81 *** SWING= 352. N. W. PART OF	184001 2-20-67	LUNAR ORB HI. 610MM B&W PHASE= 67. EMIS.ANG.= 9. LAC 76 RHPHAeus MT,FRAU MAURO	- NONE CAM.RAD.=	50K 1789.2 KM.	81967 SUN AZH= 90.4	192 8.7 22 - .9
L 3	2	149	2.91S 2.65S	22.61N 22.55W	81 *** SWING= 352. N. W. PART OF	184001 2-20-67	LUNAR ORB LO,F=80MM B&W PHASE= 66. EMIS.ANG.= 9. LAC 76 RHPHAeus MT,FRAU MAURO	- NONE CAM.RAD.=	50K 1789.2 KM.	625000 SUN AZH= 90.4	193 8.6 22 - .88
L 3	1	150	2.95S 2.70S	22.49N 22.44W	81 *** SWING= 351. N. W. PART OF	184003 2-20-67	LUNAR ORB HI. 610MM B&W PHASE= 67. EMIS.ANG.= 9. LAC 76 RHPHAeus MT,FRAU MAURO	- NONE CAM.RAD.=	50K 1789.2 KM.	81967 SUN AZH= 90.4	191 8.7 22 - .10
L 3	2	150	2.95S 2.70S	22.48N 22.43W	81 *** SWING= 351. N. W. PART OF	184003 2-20-67	LUNAR ORB LO,F=80MM B&W PHASE= 66. EMIS.ANG.= 9. LAC 76 RHPHAeus MT,FRAU MAURO	- NONE CAM.RAD.=	50K 1789.2 KM.	625000 SUN AZH= 90.4	192 8.6 22 - .88
L 3	1	151	2.99S 2.74S	22.36N 22.31W	81 *** SWING= 350. N. W. PART OF	184005 2-20-67	LUNAR ORB HI. 610MM B&W PHASE= 67. EMIS.ANG.= 9. LAC 76 RHPHAeus MT,FRAU MAURO	- NONE CAM.RAD.=	50K 1789.2 KM.	81967 SUN AZH= 90.3	190 8.7 22 - .10
L 3	2	151	2.99S 2.75S	22.36N 22.31W	81 ** SWING= 351. N. W. PART OF	184005 2-20-67	LUNAR ORB LO,F=80MM B&W PHASE= 66. EMIS.ANG.= 9. LAC 76 RHPHAeus MT,FRAU MAURO	- NONE CAM.RAD.=	50K 1789.2 KM.	625000 SUN AZH= 90.3	191 8.7 22 - .88
L 3	1	152	3.04S 2.79S	22.24N 22.19W	81 *** SWING= 349. N. W. PART OF	184007 2-20-67	LUNAR ORB HI. 610MM B&W PHASE= 67. EMIS.ANG.= 9. LAC 76 RHPHAeus MT,FRAU MAURO	- NONE CAM.RAD.=	50K 1789.2 KM.	81967 SUN AZH= 90.3	190 8.8 22 - .10
L 3	2	152	3.04S 2.79S	22.23N 22.18W	81 *** SWING= 350. N. W. PART OF	184007 2-20-67	LUNAR ORB LO,F=80MM B&W PHASE= 66. EMIS.ANG.= 9. LAC 76 RHPHAeus MT,FRAU MAURO	- NONE CAM.RAD.=	50K 1789.2 KM.	625000 SUN AZH= 90.3	190 8.7 22 - .88
L 3	1	153	2.97S 3.01S	23.51N 23.55W	82 *** SWING= 201. N. W. PART OF	220846 2-20-67	LUNAR ORB HI. 610MM B&W PHASE= 69. EMIS.ANG.= 2. LAC 76 RHPHAeus MT,FRAU MAURO	- NONE CAM.RAD.=	51K 1790.2 KM.	83607 SUN AZH= 90.3	41 2.1 23 - .**
L 3	2	153	2.97S 3.02S	23.51N 23.55W	82 *** SWING= 198. N. W. PART OF	220846 2-20-67	LUNAR ORB LO,F=80MM B&W PHASE= 69. EMIS.ANG.= 2. LAC 76 RHPHAeus MT,FRAU MAURO	- NONE CAM.RAD.=	51K 1790.2 KM.	637500 SUN AZH= 90.3	38 2.1 23 - .**
L 3	1	154	3.02S 3.16S	23.38N 23.43W	82 *** SWING= 204. N. W. PART OF	220848 2-20-67	LUNAR ORB HI. 610MM B&W PHASE= 69. EMIS.ANG.= 2. LAC 76 RHPHAeus MT,FRAU MAURO	- NONE CAM.RAD.=	51K 1790.2 KM.	83607 SUN AZH= 90.3	44 2.1 23 - .9

## LAC 76 HIPHAEOUS MT, FRAU MAURO

MIS SION	WAG ROLL	FR OR	PHOTO LAT.	PRIN. LONG.	PT. N	ORB N	GET TIMES-HR	GHI M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN.	AT PT.	T AZ	L ANG.	T ANG.	SUN FR.	SIDE LAP	FWD. ANG. VERT	ANG. FR.	ANG. VERT	ANG. FR.	ANG. VERT	
L 3	2	154	J-025	23.38W	82	...	220848	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	42	2.1	23	-	.87								
CAM-NAD.= J-065 23.42W SWING= 202. PHASE= 69. EMIS.ANG.= 2. N. W. PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																									
L 3	1	155	J-075	23.25W	82	...	220850	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	51K	83607	48	2.2	23	-	.9								
CAM-NAD.= J-115 23.30W SWING= 208. PHASE= 69. EMIS.ANG.= 2. N. W. PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																									
L 3	2	155	J-075	23.25W	82	...	220850	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	45	2.2	23	-	.88								
CAM-NAD.= J-115 23.29W SWING= 205. PHASE= 69. EMIS.ANG.= 2. N. W. PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																									
L 3	1	156	J-125	23.12W	82	...	220853	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	51K	83607	51	2.2	23	-	.9								
CAM-NAD.= J-165 23.17W SWING= 211. PHASE= 69. EMIS.ANG.= 2. N. W. PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																									
L 3	2	156	J-125	23.12W	82	...	220853	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	48	2.3	23	-	.88								
CAM-NAD.= J-165 23.17W SWING= 208. PHASE= 69. EMIS.ANG.= 2. N. W. PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																									
L 3	1	157	J-165	22.99W	82	...	220855	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	54	2.3	23	-	.9								
CAM-NAD.= J-205 23.05W SWING= 213. PHASE= 69. EMIS.ANG.= 2. N. W. PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																									
L 3	2	157	J-165	22.99W	82	...	220855	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	51	2.3	23	-	.88								
CAM-NAD.= J-215 23.04W SWING= 211. PHASE= 69. EMIS.ANG.= 2. N. W. PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																									
L 3	1	158	J-215	22.86W	82	...	220857	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	56	2.4	23	-	.9								
CAM-NAD.= J-255 22.92W SWING= 216. PHASE= 69. EMIS.ANG.= 3. N. W. PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																									
L 3	2	158	J-215	22.86W	82	...	220857	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	54	2.4	23	-	.88								
CAM-NAD.= J-265 22.91W SWING= 214. PHASE= 69. EMIS.ANG.= 3. N. W. PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																									
L 3	1	159	J-265	22.73W	82	...	220859	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	59	2.5	23	-	.10								
CAM-NAD.= J-305 22.80W SWING= 219. PHASE= 69. EMIS.ANG.= 3. N. W. PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																									
L 3	2	159	J-265	22.73W	82	...	220859	2-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	57	2.5	23	-	.88								
CAM-NAD.= J-305 22.79W SWING= 216. PHASE= 69. EMIS.ANG.= 3. N. W. PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																									
L 3	1	160	J-315	22.60W	82	...	220901	2-20-67	LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	61	2.6	24	-	.10								
CAM-NAD.= J-355 22.67W SWING= 221. PHASE= 69. EMIS.ANG.= 3. N. W. PART OF LAC 76 HIPHAEOUS MT, FRAU MAURO																									

MIS SION	MAG	FR. PHOTO OR	PRIN. PT. LAT.	ORB LONG.	GET TIME S-HR M SEC (I=ESTIMATED)	GMT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=NM, HI K=KM.	SCALE AT PRIN. PT.	TILT AZ	SUN SIDE, ANG. ANG. FWD. FR. LAP VERT R. R
L 3	2	163	3.31S	22.60W	82 *** ****	220901	2-20-67 LUNAR ORB LO, F=80MM B&W	- NONE	52K	650000	59	2.6 24 - .88
CAM. RAD. = 1791.2 KM. SUN AZM = 90.1												
N. N. PART OF LAC 76 RIPHAeus MT, FRAU MAURO												
L 4	2	112	42.57S	1.35W	21 *** ****	044650	5-19-67 LUNAR ORB LO, F=80MM B&W	- NONE	2986K	37325000	95	4.6 20 - .**
CAM. RAD. = 4725.2 KM. SUN AZM = 69.2												
LAC 112 TYCHO, STUFLER ; > 1/2 MOON SPHERE ; LAC 144 SCOTT, S. POLE NEAR SIDE > 6 LAC 76 RIPHAeus MT.												
L 4	1	113	14.64S	9.51W	21 *** ****	051900	5-19-67 LUNAR ORB HI, 610MM B&W	- NONE	2718K	4455738	123	.2 20 - .47
CAM. RAD. = 4457.2 KM. SUN AZM = 83.9												
LAC 77 PTOLMAEUS, ; LAC 76 RIPHAeus M ; LAC 95 PURBACH, AR ; LAC 94 PITATUS, M, NUBIUM ; LAC 58 COPERNICUS, RE												
L 4	1	114	13.46N	10.97W	21 *** ****	054938	5-19-67 LUNAR ORB HI, 610MM B&W	- NONE	2687K	4404918	261	1.8 19 - .4
CAM. RAD. = 4426.2 KM. SUN AZM = 94.2												
LAC 58 COPERNICUS, REINHOLD ; LAC 59 M. VAPORUM, HYGINUS ; LAC 41 APENNINES, HAEMUS ; LAC 40 TIMOCHARIS, L												
L 4	2	115	42.28N	2.67W	21 *** ****	062212	5-19-67 LUNAR ORB LO, F=80MM B&W	- NONE	2905K	36312500	101	1.4 21 - .21
CAM. RAD. = 4649.2 KM. SUN AZM = 109.5												
LAC 25 CASSINI, AL ; > 1/2 MOON SPHERE ; LAC 76 RIPHAeus M ; LAC 1 N. POLE NEAR SIDE BYRD, PFARRY > 80 N ; LAC 16												
L 4	1	120	14.29S	15.64W	22 *** ****	172107	5-19-67 LUNAR ORB HI, 610MM B&W	- NONE	2718K	4455738	77	.5 20 - .49
CAM. RAD. = 4457.2 KM. SUN AZM = 84.0												
EASTERN PART OF LAC 76 RIPHAeus M ; EASTERN PART OF LAC 94 PITATUS, M ; LAC 95 PURBACH, ARZACHEL ; LAC 58 COPERNICUS, RE												
L 4	2	126	14.28S	15.64W	22 *** ****	172107	5-19-67 LUNAR ORB LO, F=80MM B&W	- NONE	2717K	33962500	77	.5 20 - .12
CAM. RAD. = 4456.2 KM. SUN AZM = 84.0												
LAC 76 RIPHAeus M ; > 1/2 MOON SPHERE ; LAC 126 CLAVIUS, M ; LAC 25 CASSINI, ALPS MTS ; LAC 42 M. SERENITY, DA												
L 4	1	121	13.61N	16.80W	22 *** ****	175143	5-19-67 LUNAR ORB HI, 610MM B&W	- NONE	2682K	4396771	268	1.3 20 - .10
CAM. RAD. = 4421.2 KM. SUN AZM = 94.4												
EASTERN PART OF LAC 58 COPERNICUS, REINHOLD ; EASTERN PART OF LAC 40 TIMOCHARIS ; NORTHERN PART OF LAC 76 RIPHAeus MT.												
L 4	2	122	42.68N	9.24W	22 *** ****	182411	5-19-67 LUNAR ORB LO, F=80MM B&W	- NONE	2895K	36187500	105	1.4 21 - .22
CAM. RAD. = 4639.2 KM. SUN AZM = 109.1												
LAC 25 CASSINI, AL ; > 1/2 MOON SPHERE ; LAC 76 RIPHAeus M ; LAC 1 N. POLE NEAR SIDE BYRD, PFARRY > 80 N ; LAC 14 ENDYMION, STRA												
L 4	1	125	14.89S	22.97W	23 *** ****	052313	5-20-67 LUNAR ORB HI, 610MM B&W	- NONE	2717K	4454098	170	.3 19 - .44
CAM. RAD. = 4456.2 KM. SUN AZM = 84.2												
WESTERN PART OF LAC 76 RIPHAeus MT, FRAU MAURO ; CENTRAL PART OF LAC 94 PITATUS, M. ; S. W. PART OF LAC 58 COPERNICUS, R												
L 4	2	125	14.89S	22.97W	23 *** ****	052314	5-20-67 LUNAR ORB LO, F=80MM B&W	- NONE	2717K	33962500	170	.3 19 - .90
CAM. RAD. = 4456.2 KM. SUN AZM = 84.2												
LAC 76 RIPHAeus M ; > 1/2 MOON SPHERE ; LAC 128 BIELA, MAT ; LAC 23 RUMKER, SHARP ; LAC 76 EUDOXUS, BURG												
L 4	1	126	12.86N	23.95W	23 *** ****	055348	5-20-67 LUNAR ORB HI, 610MM B&W	- NONE	2477K	4388525	238	1.3 20 - .36
CAM. RAD. = 4416.2 KM. SUN AZM = 94.0												
WESTERN PART OF LAC 58 COPERNICUS, REINHOLD ; CENTRAL PART OF LAC 40 TIMOCHARIS ; N. W. PART OF LAC 76 RIPHAeus MT.												

MIS	MAG	FR.	PHOID	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDE,	
SION	ROLL	OR	LAT.	#	TIMES-HR	M SEC	(ESTIMATED)			SENSOR	AND FILTER	TUBE	PRIN.	AZ	ANG.	FWD.
#	#	MAIN	LONG.							TYPE		M=N,M=I K=KM.	PT.		FR.	LAP
															VERT	B. R
L 4	2	127	41.21N	14.29W	23	000	0000	062610	5-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	2886K	34075000	114	2.2 27	- .29
			CAM.NAD.= 42.81N	18.79W			SWING= 278.		PHASE= 74.	EMIS.ANG.= 6.	CAM.RAD.= 4625.2 KM.				SUN AZH=109.6	
			LAC 24 SINUS IRID ;	W>1/2 MOON SPHERE ;						LAC 76 RIPHAEUS M ;					LAC 196 N.POLE FARSI	
L 4	1	132	9.14S	29.59W	24	000	0000	172507	5-20-67	LUNAR ORB HI. 610MM B&W	- NONE	2717K	4454098	1	3.4 19	- .50
			CAM.NAD.= 14.42S	29.69W			SWING= 188.		PHASE= 72.	EMIS.ANG.= 9.	CAM.RAD.= 4456.2 KM.				SUN AZH= 86.2	
			LAC 76 RIPHAEUS MT,FRAU MAURO							LAC 75 LEIRONNE,FLANSD					LAC 94 PITATUS,M,NU	
L 4	2	132	9.14S	29.59W	24	000	0000	172507	5-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	2717K	33962500	1	3.4 19	- ,..
			CAM.NAD.= 14.42S	29.69W			SWING= 188.		PHASE= 72.	EMIS.ANG.= 9.	CAM.RAD.= 4456.2 KM.				SUN AZH= 86.2	
			LAC 76 RIPHAEUS M ;	W>1/2 MOON SPHERE ;						LAC 125 SCHILLER, I					LAC 25 CASSINI,ALPS	
L 4	2	139	42.17N	28.25W	25	000	0000	062940	5-21-67	LUNAR ORB LO.F=80MM B&W	- NONE	2872K	35900000	102	1.6 20	- .24
			CAM.NAD.= 42.82N	31.79W			SWING= 267.		PHASE= 74.	EMIS.ANG.= 4.	CAM.RAD.= 4611.2 KM.				SUN AZH=108.6	
			LAC 24 SINUS IRID ;	W>1/2 MOON SPHERE ;						LAC 74 GRIMALDI,B ;					LAC 19 ENDYMION,STRA	
L 4	2	145	42.34N	33.70W	26	000	0000	183109	5-21-67	LUNAR ORB LO.F=80MM B&W	- NONE	2868K	35850000	96	2.1 21	- ,..
			CAM.NAD.= 42.82N	38.27W			SWING= 260.		PHASE= 75.	EMIS.ANG.= 5.	CAM.RAD.= 4607.2 KM.				SUN AZH=109.1	
			LAC 24 SINUS IRID ;	W>1/2 MOON SPHERE ;						LAC 74 GRIMALDI,B ;					LAC 14 ENDYMION,STRA	
L 4	2	163	41.22N	53.38W	29	000	0000	063426	5-23-67	LUNAR ORB LO.F=80MM B&W	- NONE	2867K	35837500	115	2.2 20	- ,..
			CAM.NAD.= 42.87N	57.71W			SWING= 279.		PHASE= 76.	EMIS.ANG.= 6.	CAM.RAD.= 4606.2 KM.				SUN AZH=107.7	
			LAC 23 KUMKER,SHARP							W>1/2 MOON SPHERE					LAC 73 RICCIOLI,NE.ORIENTAL	
L 5	1	138	7.48S	16.83W	60	000	0000	202147	8-15-67	LUNAR ORB HI. 610MM B&W	- NONE	104K	170492	152	1.5 16	- ,..
			CAM.NAD.= 7.40S	16.86W			SWING= 64.		PHASE= 74.	EMIS.ANG.= 1.	CAM.RAD.= 1843.2 KM.				SUN AZH= 86.3	
			EASTERN PART OF							LAC 76 RIPHAEUS MT,FRAU MAURO						
L 5	2	138	7.47S	16.83W	60	000	0000	202147	8-15-67	LUNAR ORB LO.F=80MM B&W	- NONE	104K	13000000	163	1.4 16	- ,..
			CAM.NAD.= 7.40S	16.86W			SWING= 69.		PHASE= 74.	EMIS.ANG.= 1.	CAM.RAD.= 1843.2 KM.				SUN AZH= 86.3	
			EASTERN PART OF							LAC 76 RIPHAEUS MT,FRAU MAURO						
L 5	1	139	7.19S	16.80W	60	000	0000	202152	8-15-67	LUNAR ORB HI. 610MM B&W	- NONE	104K	170492	153	1.2 16	- .5
			CAM.NAD.= 7.13S	16.84W			SWING= 59.		PHASE= 74.	EMIS.ANG.= 1.	CAM.RAD.= 1843.2 KM.				SUN AZH= 86.4	
			EASTERN PART OF							LAC 76 RIPHAEUS MT,FRAU MAURO						
L 5	2	139	7.18S	16.81W	60	000	0000	202152	8-15-67	LUNAR ORB LO.F=80MM B&W	- NONE	104K	13000000	154	1.1 16	- .87
			CAM.NAD.= 7.12S	16.83W			SWING= 64.		PHASE= 74.	EMIS.ANG.= 1.	CAM.RAD.= 1843.2 KM.				SUN AZH= 86.4	
			EASTERN PART OF							LAC 76 RIPHAEUS MT,FRAU MAURO						
L 5	1	140	6.94S	16.78W	60	000	0000	202157	8-15-67	LUNAR ORB HI. 610MM B&W	- NONE	103K	168852	144	1.0 16	- .5
			CAM.NAD.= 6.85S	16.81W			SWING= 50.		PHASE= 74.	EMIS.ANG.= 1.	CAM.RAD.= 1842.2 KM.				SUN AZH= 86.5	
			EASTERN PART OF							LAC 76 RIPHAEUS MT,FRAU MAURO						
L 5	2	140	6.89S	16.79W	60	000	0000	202157	8-15-67	LUNAR ORB LO.F=80MM B&W	- NONE	103K	12875000	150	.9 16	- .87
			CAM.NAD.= 6.85S	16.81W			SWING= 56.		PHASE= 74.	EMIS.ANG.= 1.	CAM.RAD.= 1842.2 KM.				SUN AZH= 86.5	
			EASTERN PART OF							LAC 76 RIPHAEUS MT,FRAU MAURO						



MIS	HAG	FR	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T	I	L	T	SUN	SINE,	
SJUN	ROLL	OR	LAT.	"	"	"	TIMES-HR	M	SEC	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	ANG.	FWD.	FWD.	
"	"	"	HAIN	"	"	"	(ESTIMATED)	"	"	TYPE	"	M=N.MI	PT.	"	"	"	"	FR.	LAP	
"	"	"	"	"	"	"	"	"	"	"	"	K*KM.	"	"	"	"	"	VERT	K, R	
L 5	1	141	6-615	16-75W	60	***	***	202202	8-15-67	LUNAR ORB HI, 610MM 86W	-	NONE	103K	168852	132	.8	16	-.5		
			CAM-NAO-*	6-585	16-79W	SwING= 38.			PHASE= 74.			EMIS-ANG.= 1.			CAN-RAD.= 1842.2 KM.			SUN AZM= 86.5		
EASTERN PART OF LAC 76 RHPHAUS MT, FRAU MAURO																				
L 5	2	141	6-605	16-76W	60	***	***	202202	8-15-67	LUNAR ORB LO, F=80MM 86W	-	NONE	103K	1287500	137	.7	16	-.87		
			CAM-NAO-*	6-575	16-79W	SwING= 43.			PHASE= 74.			EMIS-ANG.= 1.			CAN-RAD.= 1842.2 KM.			SUN AZM= 86.5		
EASTERN PART OF LAC 76 RHPHAUS MT, FRAU MAURO																				

TOTAL PHOTOS IN THIS GROUP = 155

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN:

4 - DEGRADED PHOTOS.

S. ALMOST UNUSABLE PHOTOS.

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: 2 SYMBOLS  
 1. DIRECTION OF DIRECTION OF ILLUMINATION 2. VERTICAL TO CAMERA AXIS

TILT ANGLES : AZIMUTH OF DIRECTION OF TILT/AZ. & VERTICAL TO CAMERA AXIS  
CAMERA - NO. USED      W. APPROXIMATELY      NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND

OR(U) = NO INFO

u = APPROXIMATELY

APPROXIMATELY NEXT TO MAGN. B-BRACKET MOUNTED. 12 1/2 INCHES  
CHUCKER WIDE ANGLE LENS! FKTH=FKTAR 2.8 LENS!

CAMERA-LENS AS FOLLOWS:

SW.A. = SUPER WIDE ANGLE LENS; EXTREME ANGLE (SEE NOTE)  
 AS = A-155 LENS (PLANAR, BIOGEN, SONAR); FOCAL LENGTH (MM) & MAX. F-OPENING

MSB= HASSELBLAD; MAUR= MAUREN; ZP,ZB,ZS

14. AS EXPOS SPEED = 1/1000 (OR • TWO ZEROS)

10. AS EXPOS SPEED = 1/1000 (OR 0 = TWO ZEROS)  
 11. AS MUCH LETTER K AFTER ALTITUDE EQUALS KILOMETERS

FOR LUNAR ORBITER R AFTER ALTITUDE 240000 - RICHMOND  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT 11" X 11"

COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH

MIS SION	NAG ROLL	FR. OR MAIN	PHOTO LAT.	PHIN. LONG.	PT. M	ORB M	GLT TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS SENSOR TYPE	OR	FILM-EXPOSURE AND FILTER	ALTI H=M.MI K=KM.	SCALE PRIN. PT.	AT A7	T ANG.	L ANG.	SUN ANG.	SIDE. FR. VERT	FWD. LAP B. #
L 1	2	118	0.28N	2.55W	73	...	130205	8-25-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	52K	650000	284	2.5	20	...		
										CAM-RAO.= .26N 2.47W SWING= 93. PHASE= 68. EMIS-ANG.= 3. CAM-RAO.= 1791.2 KM. 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN										
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																				
L 1	2	119	0.25N	2.41W	73	...	130207	8-25-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	52K	650000	285	2.4	20	...		
										CAM-RAO.= .23N 2.34W SWING= 93. PHASE= 68. EMIS-ANG.= 3. CAM-RAO.= 1791.2 KM. 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN										
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																				
L 1	2	120	0.22N	2.27W	73	...	130210	8-25-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	52K	650000	285	2.3	20	...		
										CAM-RAO.= .21N 2.20W SWING= 93. PHASE= 68. EMIS-ANG.= 2. CAM-RAO.= 1791.2 KM. 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN										
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																				
L 1	2	121	0.19N	2.13W	73	...	130212	8-25-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	52K	650000	285	2.1	20	...		
										CAM-RAO.= .18N 2.06W SWING= 94. PHASE= 68. EMIS-ANG.= 2. CAM-RAO.= 1791.2 KM. 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN										
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																				
L 1	2	122	0.16N	1.98W	73	...	130214	8-25-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	51K	637500	285	2.0	20	...		
										CAM-RAO.= .15N 1.93W SWING= 94. PHASE= 68. EMIS-ANG.= 2. CAM-RAO.= 1790.2 KM. 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN										
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																				
L 1	2	123	0.13N	1.84W	73	...	130216	8-25-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	51K	637500	286	1.8	20	...		
										CAM-RAO.= .12N 1.79W SWING= 94. PHASE= 68. EMIS-ANG.= 2. CAM-RAO.= 1790.2 KM. 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN										
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																				
L 1	2	124	0.10N	1.71W	73	...	130219	8-25-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	51K	637500	286	1.7	21	...		
										CAM-RAO.= .09N 1.66W SWING= 94. PHASE= 68. EMIS-ANG.= 2. CAM-RAO.= 1790.2 KM. 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN										
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																				
L 1	2	125	0.07N	1.57W	73	...	130221	8-25-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	51K	637500	286	1.6	21	...		
										CAM-RAO.= .06N 1.52W SWING= 95. PHASE= 68. EMIS-ANG.= 2. CAM-RAO.= 1790.2 KM. 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN										
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																				
L 1	2	126	0.04N	1.43W	73	...	130223	8-25-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	51K	637500	287	1.4	21	...		
										CAM-RAO.= .03N 1.39W SWING= 95. PHASE= 68. EMIS-ANG.= 1. CAM-RAO.= 1790.2 KM. 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN										
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																				

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB M	GET TIMES-HR (ESTIMATED)	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE MNM. KI KMK.	SCALE AT PRIN. PT.	T I L T AZ FR. VERT	SUN SIDE, ANG. ANG. FWD. LAP 8. 8
L 1	2	127	0.01N 1.29W	73	000 0000	130225	8-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	287	1.3 21	-.87
CAM. RAD. = 0.00N 1.25W SWING = 96. PHASE = 68. EMIS. ANG. = 1. CAM. RAD. = 1790.2 KM. SUN AZM = 88.4													
SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN													
L 1	2	128	0.02S 1.15W	73	000 0000	130228	8-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	288	1.1 21	-.87
CAM. RAD. = 0.03S 1.12W SWING = 97. PHASE = 68. EMIS. ANG. = 1. CAM. RAD. = 1790.2 KM. SUN AZM = 88.4													
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS													
L 1	2	129	0.05S 1.01W	73	000 0000	130230	8-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	289	1.0 21	-.87
CAM. RAD. = 0.06S 0.98W SWING = 97. PHASE = 68. EMIS. ANG. = 1. CAM. RAD. = 1790.2 KM. SUN AZM = 88.4													
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS													
L 1	2	130	0.08S 0.87W	73	000 0000	130232	8-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	290	.9 21	-.87
CAM. RAD. = 0.09S 0.85W SWING = 99. PHASE = 68. EMIS. ANG. = 1. CAM. RAD. = 1790.2 KM. SUN AZM = 88.3													
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS													
L 1	2	131	0.11S 0.74W	73	000 0000	130234	8-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	292	.7 22	-.87
CAM. RAD. = 0.11S 0.72W SWING = 100. PHASE = 68. EMIS. ANG. = 1. CAM. RAD. = 1790.2 KM. SUN AZM = 88.3													
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS													
L 1	2	132	0.14S .50W	73	000 0000	130237	8-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	294	.6 22	-.87
CAM. RAD. = 0.14S 0.58W SWING = 102. PHASE = 68. EMIS. ANG. = 1. CAM. RAD. = 1790.2 KM. SUN AZM = 88.3													
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS													
L 1	2	133	0.17S 0.46W	73	000 0000	130239	8-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	297	.5 22	-.87
CAM. RAD. = 0.17S 0.45W SWING = 106. PHASE = 68. EMIS. ANG. = 1. CAM. RAD. = 1790.2 KM. SUN AZM = 88.3													
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS													
L 1	2	141	3.39S 4.20W	83	000 0000	233225	8-26-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K 612500	75	.5 35	-.00
CAM. RAD. = 3.40S 4.21W SWING = 194. PHASE = 55. EMIS. ANG. = 1. CAM. RAD. = 1788.2 KM. SUN AZM = 85.7													
N. N. PART OF LAC 77 PTOLMAEUS, KLEIN													
L 1	2	142	3.50S 3.67W	83	000 0000	233233	8-26-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K 625000	63	.8 36	-.50
CAM. RAD. = 3.51S 3.69W SWING = 232. PHASE = 55. EMIS. ANG. = 1. CAM. RAD. = 1789.2 KM. SUN AZM = 85.6													
N. N. PART OF LAC 77 PTOLMAEUS, KLEIN													
L 1	2	143	3.61S 3.12W	83	000 0000	233242	8-26-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K 637500	78	1.3 36	-.51
CAM. RAD. = 3.62S 3.16W SWING = 246. PHASE = 55. EMIS. ANG. = 1. CAM. RAD. = 1790.2 KM. SUN AZM = 85.4													
N. N. PART OF LAC 77 PTOLMAEUS, KLEIN													
L 1	2	144	3.72S 2.57W	83	000 0000	233251	8-26-66	LUNAR ORB LO.F=80MM B&W	- NONE	52K 650000	85	1.8 37	-.51
CAM. RAD. = 3.73S 2.63W SWING = 253. PHASE = 55. EMIS. ANG. = 2. CAM. RAD. = 1791.2 KM. SUN AZM = 85.3													
N. N. PART OF LAC 77 PTOLMAEUS, KLEIN													
L 1	2	145	3.84S 2.01W	83	000 0000	233300	8-26-66	LUNAR ORB LO.F=80MM B&W	- NONE	53K 662500	88	2.4 38	-.51
CAM. RAD. = 3.84S 2.08W SWING = 257. PHASE = 55. EMIS. ANG. = 2. CAM. RAD. = 1792.2 KM. SUN AZM = 85.1													
N. N. PART OF LAC 77 PTOLMAEUS, KLEIN													

REPRODUCIBILITY OF FILM  
ORIGINAL PAGE IS POOR

MIS SION	MAG #	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR	GMT M SEC (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE	SCALE PRIN. M=N, H=I K=KM.	AT PT.	T I L T A7	SUN ANG. FR. VERT	SIDE, FWD. LAP S. S
L 1	2	146	3.95S	1.44W	83	0000	233310	8-26-66 LUNAR ORB LO.F=80MM B&W	- NONE	54K	675000	91	2.9 38	-.50	
		CAM. RAD.=	3.95S	1.53W	SWING= 259.		PHASE= 55.	EMIS. ANG.= 3.	CAM. RAD.=		1793.2 KM.	SUN AZM= 85.0			
N. W. PART OF LAC 77 PTOLMAEUS, KLEIN															
L 1	2	147	4.07S	0.85W	83	0000	233319	8-26-66 LUNAR ORB LO.F=80MM B&W	- NONE	55K	687500	92	3.5 39	-.50	
		CAM. RAD.=	4.07S	0.96W	SWING= 261.		PHASE= 55.	EMIS. ANG.= 4.	CAM. RAD.=		1794.2 KM.	SUN AZM= 84.8			
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 1	2	148	4.19S	0.26W	83	0000	233329	8-26-66 LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	94	4.1 39	-.51	
		CAM. RAD.=	4.18S	0.39W	SWING= 262.		PHASE= 55.	EMIS. ANG.= 4.	CAM. RAD.=		1795.2 KM.	SUN AZM= 84.6			
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 2	1	93	0.21N	1.10W	71	0000	092737	11-21-66 LUNAR ORB HI. 610MM B&W	- NONE	44K	72131	191	48.3 12	-.00	
		CAM. RAD.=	4.15N	0.31W	SWING= 1.		PHASE= 76.	EMIS. ANG.= 72.	CAM. RAD.=		1783.2 KM.	SUN AZM= 90.4			
SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 2	2	93	0.23N	1.08W	71	0000	092737	11-21-66 LUNAR ORB LO.F=80MM B&W	- NONE	44K	550000	191	48.2 12	-.00	
		CAM. RAD.=	4.15N	0.31W	SWING= 1.		PHASE= 76.	EMIS. ANG.= 72.	CAM. RAD.=		1783.2 KM.	SUN AZM= 90.4			
SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 2	2	115	0.64N	0.99W	80	0000	164913	11-22-66 LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	103	1.5 28	-.87	
		CAM. RAD.=	0.65N	1.03W	SWING= 271.		PHASE= 63.	EMIS. ANG.= 1.	CAM. RAD.=		1786.2 KM.	SUN AZM= 90.8			
SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 2	2	116	0.61N	0.86W	80	0000	164915	11-22-66 LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	103	1.6 28	-.87	
		CAM. RAD.=	0.62N	0.90W	SWING= 271.		PHASE= 63.	EMIS. ANG.= 2.	CAM. RAD.=		1786.2 KM.	SUN AZM= 90.7			
SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 2	2	117	0.58N	0.73W	80	0000	164918	11-22-66 LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	103	1.7 28	-.87	
		CAM. RAD.=	0.59N	0.78W	SWING= 270.		PHASE= 63.	EMIS. ANG.= 2.	CAM. RAD.=		1786.2 KM.	SUN AZM= 90.7			
SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 2	2	118	0.56N	0.60W	80	0000	164920	11-22-66 LUNAR ORB LO.F=80MM B&W	- NONE	48K	600000	102	1.9 28	-.87	
		CAM. RAD.=	0.57N	0.65W	SWING= 270.		PHASE= 63.	EMIS. ANG.= 2.	CAM. RAD.=		1787.2 KM.	SUN AZM= 90.7			
SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 2	2	119	0.53N	0.47W	80	0000	164922	11-22-66 LUNAR ORB LO.F=80MM B&W	- NONE	48K	600000	102	2.0 29	-.87	
		CAM. RAD.=	0.54N	0.53W	SWING= 270.		PHASE= 63.	EMIS. ANG.= 2.	CAM. RAD.=		1787.2 KM.	SUN AZM= 90.7			
SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 2	2	120	0.50N	0.34W	80	0000	164924	11-22-66 LUNAR ORB LO.F=80MM B&W	- NONE	48K	600000	102	2.1 29	-.87	
		CAM. RAD.=	0.51N	0.40W	SWING= 270.		PHASE= 63.	EMIS. ANG.= 2.	CAM. RAD.=		1787.2 KM.	SUN AZM= 90.7			
SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 2	2	121	0.32N	1.40W	81	0000	201812	11-22-66 LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	102	1.3 29	-.00	
		CAM. RAD.=	0.33N	1.43W	SWING= 270.		PHASE= 62.	EMIS. ANG.= 1.	CAM. RAD.=		1788.2 KM.	SUN AZM= 90.6			
SOUTHERN PART OF LAC 59 M. VAPORUM, HYGINUS 6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N, MI K=KM.	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE. ANG. FR. VERT	SIDE. FWD. LAP S. S
L 2	2	122	0.29N	1.26W	81	000	201814 11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	102	1.4 30	-.87
CAM.NAD.= .30N 1.30W SWING= 270. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1788.2 KM. SUN AZM= 90.6														
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 2	2	123	0.26N	1.13W	81	000	201816 11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	102	1.5 30	-.87
CAM.NAD.= .27N 1.17W SWING= 270. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZM= 90.6														
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 2	2	124	0.23N	0.99W	81	000	201819 11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	102	1.7 30	-.87
CAM.NAD.= .24N 1.04W SWING= 270. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZM= 90.6														
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 2	1	125	0.20N	0.87W	81	000	201821 11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	50K	81967	105	1.8 30	-.6
CAM.NAD.= .22N 0.92W SWING= 273. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZM= 90.5														
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 2	2	125	0.20N	0.86W	81	000	201821 11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	102	1.8 30	-.87
CAM.NAD.= .21N 0.91W SWING= 270. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZM= 90.5														
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 2	1	126	0.17N	0.73W	81	000	201823 11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	50K	81967	105	1.9 30	-.6
CAM.NAD.= .19N 0.78W SWING= 273. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZM= 90.5														
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 2	2	126	0.18N	0.72W	81	000	201823 11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	102	1.9 30	-.87
CAM.NAD.= .19N 0.78W SWING= 270. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZM= 90.5														
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 2	1	127	0.14N	0.59W	81	000	201825 11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	50K	81967	105	2.0 30	-.6
CAM.NAD.= .16N 0.65W SWING= 273. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZM= 90.5														
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 2	2	127	0.15N	0.58W	81	000	201825 11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	102	2.1 30	-.87
CAM.NAD.= .16N 0.64W SWING= 270. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1789.2 KM. SUN AZM= 90.5														
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 2	1	128	0.12N	0.46W	81	000	201827 11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	51K	83607	105	2.2 30	-.6
CAM.NAD.= .13N 0.52W SWING= 273. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1790.2 KM. SUN AZM= 90.5														
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 2	2	128	0.12N	0.44W	81	000	201827 11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	102	2.2 30	-.87
CAM.NAD.= .13N 0.51W SWING= 270. PHASE= 62. EMIS.ANG.= 2. CAM.RAD.= 1790.2 KM. SUN AZM= 90.5														
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS & NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 2	1	129	0.04S	1.63W	82	000	234714 11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	104	1.4 31	-.00
CAM.NAD.= .03S 1.67W SWING= 272. PHASE= 60. EMIS.ANG.= 1. CAM.RAD.= 1791.2 KM. SUN AZM= 90.4														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														

## LAC 77 PTOLMAEUS, KLEIN

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR (ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE M=N.MI K=KN.	SCALE AT PRIN. PT.	T I L T AZ	SUN ANG. FR. VERT	SIDE, ANG. FWD. LAP R. 8
L 2	2	129	0.04S 1.62W	82	000 0000	234714	11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	52K 650000	99	1.4 31	- .00	
CAM.NAD.= .03S 1.66W SWING= 267. PHASE= 60. EMIS.ANG.= 1. CAM.RAD.= 1791.2 KM. SUN AZH= 90.4														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														
L 2	1	130	0.07S 1.49W	82	000 0000	234716	11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	52K 85246	104	1.5 31	- .6	
CAM.NAD.= .06S 1.53W SWING= 272. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZH= 90.4														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														
L 2	2	130	0.07S 1.48W	82	000 0000	234716	11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	52K 650000	100	1.6 31	- .87	
CAM.NAD.= .06S 1.53W SWING= 268. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZH= 90.4														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														
L 2	1	131	0.10S 1.35W	82	000 0000	234718	11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	52K 85246	104	1.7 31	- .6	
CAM.NAD.= .09S 1.39W SWING= 272. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZH= 90.4														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														
L 2	2	131	0.10S 1.34W	82	000 0000	234718	11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	52K 650000	100	1.7 31	- .87	
CAM.NAD.= .09S 1.39W SWING= 268. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZH= 90.4														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														
L 2	1	132	0.13S 1.20W	82	000 0000	234721	11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	53K 86885	103	1.8 31	- .6	
CAM.NAD.= .12S 1.25W SWING= 272. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZH= 90.4														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														
L 2	2	132	0.13S 1.19W	82	000 0000	234721	11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	53K 662500	100	1.8 31	- .87	
CAM.NAD.= .12S 1.25W SWING= 268. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZH= 90.4														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														
L 2	1	133	0.16S 1.06W	82	000 0000	234723	11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	53K 86885	103	1.9 32	- .5	
CAM.NAD.= .15S 1.11W SWING= 271. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZH= 90.3														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														
L 2	2	133	0.16S 1.15W	82	000 0000	234723	11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	53K 662500	100	2.0 32	- .87	
CAM.NAD.= .15S 1.11W SWING= 268. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZH= 90.3														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														
L 2	1	134	0.20S 0.91W	82	000 0000	234725	11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	53K 86885	103	2.1 32	- .5	
CAM.NAD.= .18S 0.97W SWING= 271. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZH= 90.3														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														
L 2	2	134	0.19S 0.90W	82	000 0000	234725	11-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	53K 662500	100	2.1 32	- .87	
CAM.NAD.= .18S 0.96W SWING= 268. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZH= 90.3														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														
L 2	1	135	0.23S 0.76W	82	000 0000	234728	11-22-66	LUNAR ORB HI. 610MM B&W	- NONE	53K 86885	103	2.2 32	- .4	
CAM.NAD.= .21S 0.83W SWING= 271. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZH= 90.3														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN & SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS														

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## LAC 77 PTOLMAEUS, KLEIN

L	2	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	TILT	SUN SIDE		
																SENSOR	AND FILTER
		ROLL	OR	LAT.	#	TIMES-HR	M	SEC									
		#	MAIN	LONG.	(ESTIMATED)												
		#	#	#	#	#	#	#							#		
L 2	2	135	0.235	0.75W	82	000	0000	234728	11-22-66	LUNAR ORB LO.F=80MM B&W	-	NONE	53K	662500	100	2.3 32	-0.87
		CAM.NAD.=	.215	0.82W		SWING=	268.		PHASE=	60.	EMIS.ANG.=	2.	CAM.RAD.=	1792.2 KM.		SUN AZM=	90.3
		NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
		6 SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS															
L 2	1	136	0.265	0.61W	82	000	0000	234730	11-22-66	LUNAR ORB HI. 610MM B&W	-	NONE	54K	88525	103	2.4 32	-0.4
		CAM.NAD.=	.245	0.68W		SWING=	271.		PHASE=	60.	EMIS.ANG.=	3.	CAM.RAD.=	1793.2 KM.		SUN AZM=	90.3
		NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
		6 SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS															
L 2	2	136	0.265	0.60W	82	000	0000	234730	11-22-66	LUNAR ORB LO.F=80MM B&W	-	NONE	54K	675000	100	2.4 32	-0.87
		CAM.NAD.=	.245	0.67W		SWING=	268.		PHASE=	60.	EMIS.ANG.=	3.	CAM.RAD.=	1793.2 KM.		SUN AZM=	90.3
		NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
		6 SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS															
L 3	1	84	0.80N	1.04W	62	000	0000	003514	2-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	47K	77049	258	67.4 10	-0.00
		CAM.NAD.=	1.61N	2.92E		SWING=	32.		PHASE=	16.	EMIS.ANG.=	71.	CAM.RAD.=	1786.2 KM.		SUN AZM=	91.6
		SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS															
		6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 3	2	84	0.80N	1.03W	62	000	0000	003514	2-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	47K	587500	258	67.4 10	-0.00
		CAM.NAD.=	1.61N	2.93E		SWING=	32.		PHASE=	15.	EMIS.ANG.=	71.	CAM.RAD.=	1786.2 KM.		SUN AZM=	91.6
		SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS															
		6 N. PART OF LAC 77 PTOLMAEUS, KLEIN															
L 3	2	90	1.01N	1.05W	64	000	0000	073219	2-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	46K	575000	201	23.5 13	-0.87
		CAM.NAD.=	1.63N	0.80W		SWING=	1.		PHASE=	70.	EMIS.ANG.=	24.	CAM.RAD.=	1785.2 KM.		SUN AZM=	91.8
		SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS															
		6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 3	2	91	0.96N	0.92W	64	000	0000	073221	2-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	46K	575000	201	23.5 14	-0.87
		CAM.NAD.=	1.58N	0.67W		SWING=	1.		PHASE=	70.	EMIS.ANG.=	24.	CAM.RAD.=	1785.2 KM.		SUN AZM=	91.7
		SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS															
		6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 3	2	92	0.91N	0.79W	64	000	0000	073223	2-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	46K	575000	201	23.5 14	-0.87
		CAM.NAD.=	1.53N	0.55W		SWING=	1.		PHASE=	70.	EMIS.ANG.=	24.	CAM.RAD.=	1785.2 KM.		SUN AZM=	91.7
		SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS															
		6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 3	2	93	0.86N	0.66W	64	000	0000	073225	2-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	46K	575000	201	23.5 14	-0.88
		CAM.NAD.=	1.48N	0.42W		SWING=	0.		PHASE=	70.	EMIS.ANG.=	24.	CAM.RAD.=	1785.2 KM.		SUN AZM=	91.7
		SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS															
		6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 3	2	99	0.69N	1.03W	65	000	0000	110121	2-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	45K	562500	200	10.1 15	-0.87
		CAM.NAD.=	.94N	0.93W		SWING=	360.		PHASE=	72.	EMIS.ANG.=	10.	CAM.RAD.=	1784.2 KM.		SUN AZM=	91.7
		SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS															
		6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 3	2	100	0.65N	0.91W	65	000	0000	110123	2-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	45K	562500	200	10.1 15	-0.87
		CAM.NAD.=	.89N	0.82W		SWING=	359.		PHASE=	72.	EMIS.ANG.=	10.	CAM.RAD.=	1784.2 KM.		SUN AZM=	91.7
		SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS															
		6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															
L 3	2	101	0.60N	0.79W	65	000	0000	110125	2-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	45K	562500	199	10.1 15	-0.87
		CAM.NAD.=	.85N	0.70W		SWING=	358.		PHASE=	72.	EMIS.ANG.=	10.	CAM.RAD.=	1784.2 KM.		SUN AZM=	91.7
		SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS															
		6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN															

MIS	MAG	FR, PHOTO	PRIN, PT.	ORB	GET	GMT	M-DAY	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	TILT	SUN SIDE,
SION	HOLL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.
#	#	MAIN	LUNG.		(ESTIMATED)			TYPE		M=N, MI	PT.	FR.	FWD.
										K=KM.		VERT	LAP
L 3	2	104	0.74N	5.70W	67	000	175809	2-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	45K	562500	203	18.9 14
		CAM.NAD.=	1.22N	5.50W			Swing= 2.	PHASE= 70.	EMIS.ANG.= 19.	CAM.RAD.=	1784.2 KM.	SUN	AZM= 91.7
		S. N. PART OF		LAC 59	M.VAPORUM, HYGINUS			6	N. N. PART OF				
L 3	2	105	0.56N	5.20W	67	000	175810	2-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	45K	562500	201	18.9 15
		CAM.NAD.=	1.03N	5.01W			Swing= 1.	PHASE= 70.	EMIS.ANG.= 19.	CAM.RAD.=	1784.2 KM.	SUN	AZM= 91.7
		S. N. PART OF		LAC 59	M.VAPORUM, HYGINUS			6	N. N. PART OF				
L 3	2	106	0.37N	4.70W	67	000	175826	2-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	45K	562500	200	18.9 15
		CAM.NAD.=	.84N	4.52W			Swing= 359.	PHASE= 70.	EMIS.ANG.= 19.	CAM.RAD.=	1784.2 KM.	SUN	AZM= 91.6
		S. N. PART OF		LAC 59	M.VAPORUM, HYGINUS			6	N. N. PART OF				
L 3	1	107	0.37S	5.60W	69	000	005616	2-19-67 LUNAR ORB HI. 610MM B&W	- NONE	44K	72131	198	5.2 18
		CAM.NAD.=	.24S	5.56W			Swing= 357.	PHASE= 71.	EMIS.ANG.= 5.	CAM.RAD.=	1783.2 KM.	SUN	AZM= 91.4
		N. N. PART OF		LAC 77	PTOLMAEUS, KLEIN								
L 3	2	107	0.37S	5.59W	69	000	005616	2-19-67 LUNAR ORB LO.F=80MM B&W	- NONE	44K	550000	199	5.1 18
		CAM.NAD.=	.24S	5.55W			Swing= 357.	PHASE= 71.	EMIS.ANG.= 5.	CAM.RAD.=	1783.2 KM.	SUN	AZM= 91.4
		N. N. PART OF		LAC 77	PTOLMAEUS, KLEIN			6	S. N. PART OF				
L 3	1	108	4.38S	3.28E	70	000	042754	2-19-67 LUNAR ORB HI. 610MM B&W	- NONE	51K	83607	93	.8 28
		CAM.NAD.=	4.38S	3.25E			Swing= 253.	PHASE= 63.	EMIS.ANG.= 1.	CAM.RAD.=	1790.2 KM.	SUN	AZM= 89.3
		N. E. PART OF		LAC 77	PTOLMAEUS, KLEIN								
L 3	2	108	4.38S	3.28E	70	000	042754	2-19-67 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	87	.7 28
		CAM.NAD.=	4.38S	3.26E			Swing= 246.	PHASE= 62.	EMIS.ANG.= 1.	CAM.RAD.=	1790.2 KM.	SUN	AZM= 89.3
		N. E. PART OF		LAC 77	PTOLMAEUS, KLEIN								
L 3	1	109	4.58S	3.80E	70	000	042803	2-19-67 LUNAR ORB HI. 610MM B&W	- NONE	52K	85246	100	1.3 29
		CAM.NAD.=	4.57S	3.76E			Swing= 260.	PHASE= 63.	EMIS.ANG.= 1.	CAM.RAD.=	1791.2 KM.	SUN	AZM= 89.1
		N. E. PART OF		LAC 77	PTOLMAEUS, KLEIN								
L 3	2	109	4.58S	3.81E	70	000	042803	2-19-67 LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	97	1.2 29
		CAM.NAD.=	4.57S	3.77E			Swing= 256.	PHASE= 62.	EMIS.ANG.= 1.	CAM.RAD.=	1791.2 KM.	SUN	AZM= 89.1
		N. E. PART OF		LAC 77	PTOLMAEUS, KLEIN								
L 3	1	110	4.78S	4.34E	70	000	042812	2-19-67 LUNAR ORB HI. 610MM B&W	- NONE	53K	86885	103	1.8 29
		CAM.NAD.=	4.77S	4.28E			Swing= 263.	PHASE= 63.	EMIS.ANG.= 2.	CAM.RAD.=	1792.2 KM.	SUN	AZM= 89.0
		N. E. PART OF		LAC 77	PTOLMAEUS, KLEIN								
L 3	2	110	4.78S	4.35E	70	000	042812	2-19-67 LUNAR ORB LO.F=80MM B&W	- NONE	53K	662500	101	1.8 29
		CAM.NAD.=	4.77S	4.29E			Swing= 260.	PHASE= 62.	EMIS.ANG.= 2.	CAM.RAD.=	1792.2 KM.	SUN	AZM= 89.0
		N. E. PART OF		LAC 77	PTOLMAEUS, KLEIN								
L 3	1	111	4.99S	4.88E	70	000	042821	2-19-67 LUNAR ORB HI. 610MM B&W	- NONE	54K	88525	105	2.4 30
		CAM.NAD.=	4.97S	4.81E			Swing= 264.	PHASE= 63.	EMIS.ANG.= 3.	CAM.RAD.=	1793.2 KM.	SUN	AZM= 88.8
		N. E. PART OF		LAC 77	PTOLMAEUS, KLEIN								



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## LAC 77 PTOLMAEUS,KLEIN

MIS SION	MAG ROLL	FR,PHOTO ON LAT.	PRIN.PT. LAT.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE	SCALE AT PRIN. PT.	TILT AZ	SUN ANG.	SIDE. ANG. FWD. LAP
#	#	MAIN #	LONG.		(ESTIMATED)						M=N,HI K=KM.		FR. VERT	%
L 3	2	111	4.99S	4.89E	70	000	042821	2-19-67 LUNAR ORB LO.F=80MM B&W	- NONE	54K	575000	103	2.3 30	- .51
		CAM.NAD.=	4.97S	4.82E		SwING= 263.		PHASE= 62.	EMIS.ANG.= 2.		1793.2 KM.		SUN AZM= 88.8	
								N. E. PART OF LAC 77 PTOLMAEUS,KLEIN						
L 3	1	112	1.83S	8.20W	71	000	075345	2-19-67 LUNAR ORB HI. 610MM B&W	- NONE	44K	72131	201	35.4 19	- .00
		CAM.NAD.=	.87S	7.82W		SwING= 1.		PHASE= 63.	EMIS.ANG.= 36.		1783.2 KM.		SUN AZM= 90.9	
								N. W. PART OF LAC 77 PTOLMAEUS,KLEIN						
L 3	2	112	1.83S	8.20W	71	000	075345	2-19-67 LUNAR ORB LO.F=80MM B&W	- NONE	44K	550000	201	35.3 19	- .00
		CAM.NAD.=	.87S	7.81W		SwING= 1.		PHASE= 63.	EMIS.ANG.= 36.		1783.2 KM.		SUN AZM= 90.9	
								N. W. PART OF LAC 77 PTOLMAEUS,KLEIN						
L 3	1	113	1.88S	8.06W	71	000	075347	2-19-67 LUNAR ORB HI. 610MM B&W	- NONE	44K	72131	201	35.4 19	- .6
		CAM.NAD.=	.92S	7.68W		SwING= 1.		PHASE= 63.	EMIS.ANG.= 36.		1783.2 KM.		SUN AZM= 90.9	
								N. W. PART OF LAC 77 PTOLMAEUS,KLEIN						
L 3	2	113	1.88S	8.06W	71	000	075347	2-19-67 LUNAR ORB LO.F=80MM B&W	- NONE	44K	550000	201	35.3 19	- .87
		CAM.NAD.=	.92S	7.68W		SwING= 1.		PHASE= 63.	EMIS.ANG.= 36.		1783.2 KM.		SUN AZM= 90.9	
								N. W. PART OF LAC 77 PTOLMAEUS,KLEIN						
L 3	1	114	1.94S	7.92W	71	000	075349	2-19-67 LUNAR ORB HI. 610MM B&W	- NONE	44K	72131	201	35.4 19	- .6
		CAM.NAD.=	.97S	7.54W		SwING= 0.		PHASE= 63.	EMIS.ANG.= 36.		1783.2 KM.		SUN AZM= 90.9	
								N. W. PART OF LAC 77 PTOLMAEUS,KLEIN						
L 3	2	114	1.94S	7.92W	71	000	075349	2-19-67 LUNAR ORB LO.F=80MM B&W	- NONE	44K	550000	201	35.3 19	- .87
		CAM.NAD.=	.98S	7.54W		SwING= 1.		PHASE= 63.	EMIS.ANG.= 36.		1783.2 KM.		SUN AZM= 90.9	
								N. W. PART OF LAC 77 PTOLMAEUS,KLEIN						
L 3	1	115	1.99S	7.78W	71	000	075352	2-19-67 LUNAR ORB HI. 610MM B&W	- NONE	44K	72131	201	35.4 19	- .6
		CAM.NAD.=	1.03S	7.41W		SwING= 0.		PHASE= 63.	EMIS.ANG.= 36.		1783.2 KM.		SUN AZM= 90.9	
								N. W. PART OF LAC 77 PTOLMAEUS,KLEIN						
L 3	2	115	1.99S	7.77W	71	000	075352	2-19-67 LUNAR ORB LO.F=80MM B&W	- NONE	44K	550000	201	35.3 19	- .87
		CAM.NAD.=	1.03S	7.40W		SwING= 0.		PHASE= 63.	EMIS.ANG.= 36.		1783.2 KM.		SUN AZM= 90.9	
								N. W. PART OF LAC 77 PTOLMAEUS,KLEIN						
L 3	1	116	3.11S	4.39W	72	000	112349	2-19-67 LUNAR ORB HI. 610MM B&W	- NONE	47K	77049	196	6.4 24	- .00
		CAM.NAD.=	2.94S	4.34W		SwING= 356.		PHASE= 64.	EMIS.ANG.= 6.		1786.2 KM.		SUN AZM= 90.2	
								NORTHERN PART OF LAC 77 PTOLMAEUS,KLEIN						
L 3	2	116	3.11S	4.39W	72	000	112349	2-19-67 LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	197	6.3 24	- .00
		CAM.NAD.=	2.95S	4.34W		SwING= 356.		PHASE= 64.	EMIS.ANG.= 6.		1786.2 KM.		SUN AZM= 90.2	
								NORTHERN PART OF LAC 77 PTOLMAEUS,KLEIN						
L 3	1	117	3.29S	3.91W	72	000	112357	2-19-67 LUNAR ORB HI. 610MM B&W	- NONE	47K	77049	192	6.4 25	- .00
		CAM.NAD.=	3.12S	3.88W		SwING= 351.		PHASE= 64.	EMIS.ANG.= 7.		1786.2 KM.		SUN AZM= 90.1	
								NORTHERN PART OF LAC 77 PTOLMAEUS,KLEIN						

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR (ESTIMATED)	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N, HI K=KM.	SCALE AT PRIN. PT.	T I L T AZ ANG.	SUN SIDE, ANG. FR. VERT	FWD. LAP R, R
L 3	2	117	3.29S 3.91W	72	***	****	112357 2-19-67	LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	192	6.3 25	-0.51
CAM.NAD.= 3.13S 3.87W SWING= 352. PHASE= 64. EMIS.ANG.= 6. CAM.RAD.= 1786.2 KM. SUN AZM= 90.1														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 3	1	118	3.48S 3.42W	72	***	****	112405 2-19-67	LUNAR ORB HI, 610MM B&W	- NONE	47K	77049	187	6.5 25	-0.00
CAM.NAD.= 3.31S 3.40W SWING= 347. PHASE= 64. EMIS.ANG.= 7. CAM.RAD.= 1786.2 KM. SUN AZM= 90.0														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 3	2	118	3.48S 3.41W	72	***	****	112405 2-19-67	LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	188	6.4 25	-0.51
CAM.NAD.= 3.31S 3.39W SWING= 347. PHASE= 64. EMIS.ANG.= 7. CAM.RAD.= 1786.2 KM. SUN AZM= 90.0														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 3	1	119	3.67S 2.92W	72	***	****	112414 2-19-67	LUNAR ORB HI, 610MM B&W	- NONE	48K	78689	183	6.6 26	-0.00
CAM.NAD.= 3.49S 2.91W SWING= 342. PHASE= 64. EMIS.ANG.= 7. CAM.RAD.= 1787.2 KM. SUN AZM= 89.9														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 3	2	119	3.68S 2.91W	72	***	****	112414 2-19-67	LUNAR ORB LO.F=80MM B&W	- NONE	48K	600000	183	6.6 26	-0.50
CAM.NAD.= 3.49S 2.90W SWING= 343. PHASE= 64. EMIS.ANG.= 7. CAM.RAD.= 1787.2 KM. SUN AZM= 89.9														
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN														
L 4	1	96	15.18S 10.67E	18	***	****	171241 5-17-67	LUNAR ORB HI, 610MM B&W	- NONE	2722K	4462295	138	6.22	-0.46
CAM.NAD.= 14.45S 9.99E SWING= 324. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 4461.2 KM. SUN AZM= 83.2														
LAC 78 THEOPHILUS ; LAC 77 PTOLMAEUS ; LAC 95 PURBACH, AR ; LAC 96 ALTAI SCARP, GEBER & LAC 59 M.VAPORUM, HYG														
L 4	1	97	12.97N 9.66E	18	***	****	174328 5-17-67	LUNAR ORB HI, 610MM B&W	- NONE	2705K	4434426	245	1.4 22	-0.17
CAM.NAD.= 13.70N 11.76E SWING= 60. PHASE= 65. EMIS.ANG.= 4. CAM.RAD.= 4444.2 KM. SUN AZM= 94.7														
LAC 59 M.VAPORUM, HYGINUS ; LAC 60 J.CAESAR, SABINE, JANSSEN ; LAC 42 M.SERENITY, DAWES & LAC 41 APENNINES, HA														
L 4	2	100	42.71S 12.29E	19	***	****	044237 5-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	2978K	37225000	96	4.8 21	-0.00
CAM.NAD.= 42.25S 1.05E SWING= 295. PHASE= 81. EMIS.ANG.= 13. CAM.RAD.= 4717.2 KM. SUN AZM= 68.1														
LAC 113 MAUROLYCUS, RAB. LEVI ; >1/2 MOON SPHERE ; LAC 140 SCHRODING ; LAC 129 M.AUSTRA ; LAC 77 PTOLM & LAC 80 LANGR														
L 4	1	101	15.19S 3.83E	19	***	****	051444 5-18-67	LUNAR ORB HI, 610MM B&W	- NONE	2720K	4459016	150	5.21	-0.45
CAM.NAD.= 14.45S 3.38E SWING= 336. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 4459.2 KM. SUN AZM= 83.4														
EASTERN PART OF LAC 77 PTOLMAEUS ; EASTERN PART OF LAC 95 PURBACH, AR ; LAC 59 M.VAPORUM, HYGINUS & LAC 96 ALTAI SCARP, G														
L 4	2	101	15.19S 3.83E	19	***	****	051444 5-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	2720K	34000000	150	5.21	-0.00
CAM.NAD.= 14.45S 3.38E SWING= 336. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 4459.2 KM. SUN AZM= 83.4														
LAC 77 PTOLMAEUS ; >1/2 MOON SPHERE ; LAC 41 APENNINES ; LAC 43 MACROBIUS, PROCLUS & LAC 126 CLAVIUS, MAGI														
L 4	1	102	12.96N 3.63E	19	***	****	054527 5-18-67	LUNAR ORB HI, 610MM B&W	- NONE	2699K	4424590	237	1.1 22	-0.38
CAM.NAD.= 13.88N 5.14E SWING= 53. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4438.2 KM. SUN AZM= 94.7														
EASTERN PART OF LAC 59 M.VAPORUM, HYGINUS ; EASTERN PART OF LAC 41 APENNINES, & N. E. PART OF LAC 77 PTOLMAEUS, KL														
L 4	2	106	72.16S 9.45E	20	***	****	160406 5-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	3534K	44175000	104	3.4 9	-0.00
CAM.NAD.= 71.71S 13.37W SWING= 272. PHASE= 90. EMIS.ANG.= 10. CAM.RAD.= 5273.2 KM. SUN AZM= 58.0														
LAC 137 NEWTON, HU ; >1/2 MOON SPHERE ; LAC 129 M.AUSTRA ; LAC 131 PRANDTL PLANK & LAC 144 SCOTT, S. POLF														

L	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT		T I L T		SUN SIDE,		
												TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	#	#	#	#	#	#	#	#	#	#	#	M=N.MI K=KM.	PT.	FR.	LAP	#	
L 4	1	108	14.26S	2.36W	20	***	****	171651	5-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	2719K	4457377	77	0.5	21	-0.43
CAM.NAD.= 14.45S 3.17W SWING= 262. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4458.2 KM. SUN AZH= 83.8																		
CENTRAL PART OF LAC 77 PTOLMAEUS, KLEIN ; CENTRAL PART OF LAC 95 PURBACH, AR & S. W. PART OF LAC 59 M. VAPORUM, HY																		
L 4	2	108	14.26S	2.36W	20	***	****	71651	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2719K	33987500	76	0.5	21	-0.12
CAM.NAD.= 14.45S 3.17W SWING= 262. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4458.2 KM. SUN AZH= 83.8																		
LAC 77 PTOLMAEUS, I > 1/2 MOON SPHERE ; LAC 126 CLAVIUS, M ; LAC 25 CASSINI, ALPS MTS & LAC 61 TARUNTIVUS, LYE																		
L 4	1	109	13.79N	3.58W	20	***	****	174732	5-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	2693K	4414754	267	1.3	21	-0.7
CAM.NAD.= 13.89N 1.48W SWING= 82. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4432.2 KM. SUN AZH= 94.7																		
WESTERN PART OF LAC 59 M. VAPORUM, HYGINUS ; WESTERN PART OF LAC 41 APENNINES, & NORTHERN PART OF LAC 77 PTOLMAEUS, KL																		
L 4	1	113	14.64S	9.51W	21	***	****	051900	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2718K	4455738	123	0.2	20	-0.47
CAM.NAD.= 14.45S 9.81W SWING= 310. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4457.2 KM. SUN AZH= 83.9																		
LAC 77 PTOLMAEUS, I LAC 76 RIPHAeus M ; LAC 95 PURBACH, AR ; LAC 94 PITATUS, M. NUBIUM & LAC 58 COPERNICUS, RE																		
L 4	2	113	14.63S	9.51W	21	***	****	051900	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2718K	33975000	123	0.2	20	-0.00
CAM.NAD.= 14.45S 9.81W SWING= 309. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4457.2 KM. SUN AZH= 83.9																		
LAC 77 PTOLMAEUS, I > 1/2 MOON SPHERE ; LAC 137 NEWTON, MO ; LAC 25 CASSINI, ALPS MTS & LAC 42 M. SERENITY, DA																		
L 4	1	114	13.46N	10.97W	21	***	****	054938	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2687K	4404918	261	1.8	19	-0.4
CAM.NAD.= 13.89N 8.09W SWING= 77. PHASE= 66. EMIS.ANG.= 5. CAM.RAD.= 4426.2 KM. SUN AZH= 94.2																		
LAC 58 COPERNICUS, KEINHOLD ; LAC 59 M. VAPORUM, HYGINUS ; LAC 41 APENNINES, HAENUS & LAC 40 TIMOCHARIS, L																		
L 4	2	124	43.66S	14.08W	23	***	****	045059	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2994K	37425000	99	4.8	20	-0.00
CAM.NAD.= 42.26S 25.42W SWING= 297. PHASE= 82. EMIS.ANG.= 13. CAM.RAD.= 4733.2 KM. SUN AZH= 69.4																		
LAC 111 WILHELM, E ; > 1/2 MOON SPHERE ; LAC 94 PITATUS, M. ; LAC 77 PTOLMAEUS, KLEIN & LAC 144 SCOTT, S. POLE																		
L 4	2	134	46.31N	18.14W	24	***	****	182759	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2879K	35987500	53	3.7	21	-0.39
CAM.NAD.= 42.80N 25.31W SWING= 218. PHASE= 74. EMIS.ANG.= 10. CAM.RAD.= 4618.2 KM. SUN AZH= 113.2																		
LAC 24 SINUS IRIU ; > 1/2 MOON SPHERE ; LAC 75 LEITRONNE, F ; LAC 1 N. POLE NEAR SIDE BYRD, PFARY > 80 N & LAC 14 EUDYMION, SYRA																		
L 4	2	136	42.64S	27.40W	25	***	****	045435	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3803K	37537500	97	4.8	19	-0.00
CAM.NAD.= 42.16S 38.84W SWING= 295. PHASE= 83. EMIS.ANG.= 13. CAM.RAD.= 4742.2 KM. SUN AZH= 70.3																		
LAC 111 WILHELM, ELGEN, MEE ; > 1/2 MOON SPHERE ; LAC 144 SCOTT, S. POLE NEAR SIDE > 6 LAC 57 KEPLER, ENCKE																		
L 4	2	138	13.71N	36.45W	25	***	****	055724	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2671K	33387500	263	1.3	18	-0.61
CAM.NAD.= 13.92N 34.43W SWING= 78. PHASE= 88. EMIS.ANG.= 3. CAM.RAD.= 4410.2 KM. SUN AZH= 94.0																		
LAC 57 KEPLER, ENCKE ; > 1/2 MOON SPHERE ; LAC 110 SCHICKARD ; LAC 11 J. HENSCHEL, JURAS, ROUGIER & LAC 26 EUDOXUS, BURG																		
L 5	1	98	5.01S	4.02E	46	***	****	061012	8-14-67	LUNAR ORB HI. 610MM B&W	-	NONE	101K	165574	263	5.2	18	-0.00
CAM.NAD.= 4.97S 4.32E SWING= 169. PHASE= 67. EMIS.ANG.= 5. CAM.RAD.= 1840.2 KM. SUN AZH= 86.9																		
N. E. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	2	98	5.01S	4.01E	48	***	****	061012	8-14-67	LUNAR ORB LO.F=80MM B&W	-	NONE	100K	1250000	264	5.3	18	-0.00
CAM.NAD.= 4.97S 4.32E SWING= 170. PHASE= 66. EMIS.ANG.= 6. CAM.RAD.= 1839.2 KM. SUN AZH= 86.9																		
N. E. PART OF LAC 77 PTOLMAEUS, KLEIN																		

## LAC 77 PTOLMAEUS, KLEIN

L	S	NAG ROLL	FR. OR MAIN	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HH	GHT M SEC (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT		T I L T AZ	SUN SIDE, ANG. FR. VERT	SUN ANG.	FWD. LAP
													TUDE M=N.MI K=KM.	PRIN. PT.				
L 5	1	99	4.735	4.04E	48	000	0000	061016	8-14-67	LUNAR	ORB HI. 610MM B&W	- NONE	100K	163934	266	5.2	18	- .7
CAM.NAD.= 4.71S													1839.2	KM.	SUN	AZM= 87.0		
N. E. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	2	99	4.725	4.04E	48	000	0000	061016	8-14-67	LUNAR	ORB LO.F=80MM B&W	- NONE	100K	1250000	266	5.3	18	- .87
CAM.NAD.= 4.76S													1839.2	KM.	SUN	AZM= 87.0		
N. E. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	1	100	4.46S	4.07E	48	000	0000	061021	8-14-67	LUNAR	ORB HI. 610MM B&W	- NONE	100K	163934	269	5.1	18	- .8
CAM.NAD.= 4.45S													1839.2	KM.	SUN	AZM= 87.0		
N. E. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	2	100	4.45S	4.06E	48	000	0000	061021	8-14-67	LUNAR	ORB LO.F=80MM B&W	- NONE	100K	1250000	269	5.3	18	- .88
CAM.NAD.= 4.44S													1839.2	KM.	SUN	AZM= 87.0		
N. E. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	1	101	4.18S	4.09E	48	000	0000	061025	8-14-67	LUNAR	ORB HI. 610MM B&W	- NONE	100K	161934	272	5.1	18	- .9
CAM.NAD.= 4.19S													1839.2	KM.	SUN	AZM= 87.1		
N. E. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	2	101	4.17S	4.08E	48	000	0000	061025	8-14-67	LUNAR	ORB LO.F=80MM B&W	- NONE	100K	1250000	272	5.2	18	- .88
CAM.NAD.= 4.19S													1839.2	KM.	SUN	AZM= 87.1		
N. E. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	1	108	0.05S	1.10W	51	000	0000	154446	8-14-67	LUNAR	ORB HI. 610MM B&W	- NONE	97K	159016	269	10.2	18	- .00
CAM.NAD.= .05S													1836.2	KM.	SUN	AZM= 88.5		
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																		
													6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN					
L 5	2	108	0.04S	1.10W	51	000	0000	154446	8-14-67	LUNAR	ORB LO.F=80MM B&W	- NONE	97K	1212500	270	10.3	18	- .00
CAM.NAD.= .05S													1836.2	KM.	SUN	AZM= 88.5		
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																		
													6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN					
L 5	2	109	0.23N	1.08W	51	000	0000	154451	8-14-67	LUNAR	ORB LO.F=80MM B&W	- NONE	97K	1212500	271	10.3	18	- .87
CAM.NAD.= .21N													1836.2	KM.	SUN	AZM= 88.6		
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																		
													6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN					
L 5	2	110	0.50N	1.06W	51	000	0000	154455	8-14-67	LUNAR	ORB LO.F=80MM B&W	- NONE	97K	1212500	273	10.3	18	- .87
CAM.NAD.= .47N													1836.2	KM.	SUN	AZM= 88.7		
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																		
													6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN					
L 5	2	111	0.77N	1.04W	51	000	0000	154500	8-14-67	LUNAR	ORB LO.F=80MM B&W	- NONE	97K	1212500	274	10.3	18	- .87
CAM.NAD.= .73N													1836.2	KM.	SUN	AZM= 88.7		
SOUTHERN PART OF LAC 59 M-VAPORUM, HYGINUS																		
													6 NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN					
L 5	1	112	0.14S	1.11W	52	000	0000	185549	8-14-67	LUNAR	ORB HI. 610MM B&W	- NONE	98K	160656	96	19.8	19	- .00
CAM.NAD.= .01S													1837.2	KM.	SUN	AZM= 88.4		
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																		

MIS SION	HAG ROLL	FR. OR MAIN	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES=HR M SEC (I=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.M.I K=KM.	SCALE PRIN. PT.	T AZ	L ANG.	T ANG.	SUN ANG.	SIDE. FWD. LAP % R
L 5	2	112	0.13S	1.12W	52	000	0000	185549	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	98K	1225000	96	19.6	19	-0.00	
CAM.NAD.= .00 2.27W SWING= 3. PHASE= 91. EMIS.ANG.= 21. CAM.RAD.= 1837.2 KM. SUN AZM= 88.4																		
NORTHERN PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	2	113	0.15N	1.10W	52	000	0000	185554	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	98K	1225000	95	19.6	19	-0.87	
CAM.NAD.= .27N 2.25W SWING= 2. PHASE= 91. EMIS.ANG.= 21. CAM.RAD.= 1837.2 KM. SUN AZM= 88.5																		
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																		
L 5	2	114	0.44N	1.08W	52	000	0000	185559	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	97K	1212500	95	19.6	19	-0.87	
CAM.NAD.= .54N 2.22W SWING= 1. PHASE= 91. EMIS.ANG.= 21. CAM.RAD.= 1836.2 KM. SUN AZM= 88.6																		
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																		
L 5	2	115	0.73N	1.06W	52	000	0000	185603	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	97K	1212500	94	19.6	20	-0.87	
CAM.NAD.= .82N 2.20W SWING= 0. PHASE= 91. EMIS.ANG.= 21. CAM.RAD.= 1836.2 KM. SUN AZM= 88.7																		
SOUTHERN PART OF LAC 59 M.VAPORUM, HYGINUS																		
L 5	1	116	14.39S	4.15W	53	000	0000	220243	8-14-67	LUNAR ORB HI. 610MM B&W	- NONE	115K	180525	104	14.5	17	-0.00	
CAM.NAD.= 14.15S 5.14W SWING= 10. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 1854.2 KM. SUN AZM= 83.9																		
S. W. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	2	116	14.38S	4.16W	53	000	0000	220243	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	115K	1437500	104	14.4	17	-0.00	
CAM.NAD.= 14.15S 5.14W SWING= 10. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 1854.2 KM. SUN AZM= 84.0																		
S. W. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	1	117	14.06S	4.13W	53	000	0000	220249	8-14-67	LUNAR ORB HI. 610MM B&W	- NONE	115K	188525	102	14.5	17	-0.7	
CAM.NAD.= 13.85S 5.11W SWING= 9. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 1854.2 KM. SUN AZM= 84.0																		
S. W. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	2	117	14.05S	4.14W	53	000	0000	220249	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	115K	1437500	102	14.3	17	-0.88	
CAM.NAD.= 13.84S 5.11W SWING= 9. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 1854.2 KM. SUN AZM= 84.0																		
S. W. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	1	118	13.74S	4.11W	53	000	0000	220254	8-14-67	LUNAR ORB HI. 610MM B&W	- NONE	114K	186885	101	14.4	17	-0.7	
CAM.NAD.= 13.54S 5.09W SWING= 8. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 1853.2 KM. SUN AZM= 84.1																		
S. W. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	2	118	13.73S	4.12W	53	000	0000	220254	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	114K	1425000	101	14.3	17	-0.88	
CAM.NAD.= 13.53S 5.09W SWING= 8. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 1853.2 KM. SUN AZM= 84.1																		
S. W. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	1	119	13.41S	4.09W	53	000	0000	220259	8-14-67	LUNAR ORB HI. 610MM B&W	- NONE	113K	185246	100	14.4	17	-0.8	
CAM.NAD.= 13.24S 5.06W SWING= 7. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 1852.2 KM. SUN AZM= 84.2																		
S. W. PART OF LAC 77 PTOLMAEUS, KLEIN																		
L 5	2	119	13.41S	4.10W	53	000	0000	220300	8-14-67	LUNAR ORB LO.F=80MM B&W	- NONE	113K	1412500	100	14.2	17	-0.88	
CAM.NAD.= 13.23S 5.06W SWING= 7. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 1852.2 KM. SUN AZM= 84.2																		
S. W. PART OF LAC 77 PTOLMAEUS, KLEIN																		

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LAC 77 PTOLMAEUS, KLEIN

PAGE 258

MIS SION	MAG ROLL	FR. MAIN	PHOTO OR LAT.	PRIN. LAT.	PT. LONG.	ORB N	GET TIMES-HH	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TIDE PRIN.	SCALE AT M=N.MI PT.	T AZ	L ANG.	T ANG.	SUN SIDE, FWD.

TOTAL PHOTOS IN THIS GROUP = 141

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-), (+), ( ), ( ), ( ), ( ) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: S.W.A. = SUPER WIDE ANGLE LENS; EK=EKTA 2.8 LENS;  
MSB=HASSELBLAD; MAUR=MAUREL; 2P, 2B, 2S = ZEISS LENS(PLANAR, BIOGEN, SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
100 AS EXPOS SPEED = 1/1000 (OR \* TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SIGN	MAG ROLL	PH. MAIN	PHOTO OR	PRIN. LAT.	PT. LONG.	ORB #	SET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TIDE	SCALE AT PRIN. M=NM, MI K=KM.	T 1 AZ	L 1 ANG.	SUN ANG.	SIDE, FND. LAP R, R
L 1	2	85	U-54N	25-07E	58	000	084621	8-23-66	LUNAR ORB	LO.F=80MM B&W	- NONE	57K	712500	12	04	21	-0.00
CAM.NAD.= .52N 25-07E SWING= 180. PHASE= 69. EMIS.ANG.= 0. CAM.RAD.= 1796.2 KM. SUN AZH= 88.6																	
S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 7A THEOPHILUS, KANT																	
L 1	2	86	U-50N	25-22E	58	000	084624	8-23-66	LUNAR ORB	LO.F=80MM B&W	- NONE	57K	712500	32	04	21	-0.88
CAM.NAD.= .49N 25-21E SWING= 200. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1796.2 KM. SUN AZH= 88.6																	
S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 7A THEOPHILUS, KANT																	
L 1	2	87	U-47N	25-37E	58	000	084626	8-23-66	LUNAR ORB	LO.F=80MM B&W	- NONE	57K	712500	48	05	21	-0.88
CAM.NAD.= .46N 25-36E SWING= 216. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1796.2 KM. SUN AZH= 88.6																	
S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 7A THEOPHILUS, KANT																	
L 1	2	88	U-44N	25-52E	58	000	084629	8-23-66	LUNAR ORB	LO.F=80MM B&W	- NONE	57K	712500	59	06	21	-0.88
CAM.NAD.= .43N 25-51E SWING= 227. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1796.2 KM. SUN AZH= 88.6																	
S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 7A THEOPHILUS, KANT																	
L 1	2	89	U-41N	25-67E	58	000	084631	8-23-66	LUNAR ORB	LO.F=80MM B&W	- NONE	56K	700000	67	07	21	-0.88
CAM.NAD.= .40N 25-65E SWING= 235. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1795.2 KM. SUN AZH= 88.5																	
S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 7A THEOPHILUS, KANT																	
L 1	2	90	U-37N	25-83E	58	000	084634	8-23-66	LUNAR ORB	LO.F=80MM B&W	- NONE	56K	700000	73	09	22	-0.88
CAM.NAD.= .36N 25-80E SWING= 241. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1795.2 KM. SUN AZH= 88.5																	
S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 7A THEOPHILUS, KANT																	
L 1	2	91	U-34N	25-98E	58	000	084636	8-23-66	LUNAR ORB	LO.F=80MM B&W	- NONE	56K	700000	77	10	22	-0.87
CAM.NAD.= .33N 25-95E SWING= 245. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1795.2 KM. SUN AZH= 88.5																	
S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 7A THEOPHILUS, KANT																	
L 1	2	92	U-31N	26-13E	58	000	084638	8-23-66	LUNAR ORB	LO.F=80MM B&W	- NONE	56K	700000	80	10	22	-0.88
CAM.NAD.= .30N 26-09E SWING= 248. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1795.2 KM. SUN AZH= 88.5																	
S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 7A THEOPHILUS, KANT																	
L 1	2	93	U-27N	26-24E	58	000	084641	8-23-66	LUNAR ORB	LO.F=80MM B&W	- NONE	56K	700000	83	10	22	-0.87
CAM.NAD.= .27N 26-24E SWING= 251. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1795.2 KM. SUN AZH= 88.5																	
S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN 6 N. E. PART OF LAC 7A THEOPHILUS, KANT																	

HIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GNT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T 1	L T	SUN	Side
SUN	MULL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
"	"	MAIN	LONG.		(=ESTIMATED)			TYPE		M=N,M	PT.		FR.		LAP
										K=KM.			VERT		R. R
L 1	2	94	0°24N 26°43E	58	0000	084643	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	85	1.4	22	-.87
CAM.NAD.= .24N 26.38E SWING= 253. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 1795.2 KM. SUN AZM= 88.5															
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 78 THEOPHILUS, KANT															
L 1	2	95	0°21N 26°58E	58	0000	084646	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	86	1.6	22	-.87
CAM.NAD.= .21N 26.53E SWING= 254. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 1795.2 KM. SUN AZM= 88.5															
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 78 THEOPHILUS, KANT															
L 1	2	96	0°10N 26°73E	58	0000	084648	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	88	1.7	22	-.87
CAM.NAD.= .17N 26.67E SWING= 256. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 1795.2 KM. SUN AZM= 88.4															
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 78 THEOPHILUS, KANT															
L 1	2	97	0°14N 26°88E	58	0000	084651	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	89	1.8	23	-.87
CAM.NAD.= .14N 26.82E SWING= 257. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 1795.2 KM. SUN AZM= 88.4															
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 78 THEOPHILUS, KANT															
L 1	2	98	0°11N 27°03E	58	0000	084653	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	90	2.0	23	-.87
CAM.NAD.= .11N 26.97E SWING= 258. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 1795.2 KM. SUN AZM= 88.4															
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 78 THEOPHILUS, KANT															
L 1	2	99	0°00N 27°18E	58	0000	084656	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	91	2.1	23	-.87
CAM.NAD.= .00N 27.11E SWING= 259. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 1795.2 KM. SUN AZM= 88.4															
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 78 THEOPHILUS, KANT															
L 1	2	100	0°05N 27°33E	58	0000	084658	8-23-66	LUNAR ORB LO.F=80MM B&W	- NONE	56K	700000	91	2.3	23	-.87
CAM.NAD.= .05N 27.26E SWING= 259. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 1795.2 KM. SUN AZM= 88.4															
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. E. PART OF LAC 78 THEOPHILUS, KANT															
L 1	2	105	0°53N 11°56E	65	0000	090932	8-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	55K	687500	284	1.9	20	-.100
CAM.NAD.= .51N 11.62E SWING= 92. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1794.2 KM. SUN AZM= 88.6															
S. N. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. N. PART OF LAC 78 THEOPHILUS, KANT															
L 1	2	106	0°41N 12°13E	65	0000	090941	8-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	54K	675000	284	1.3	20	-.53
CAM.NAD.= .39N 12.17E SWING= 92. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 1793.2 KM. SUN AZM= 88.5															
S. N. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. N. PART OF LAC 78 THEOPHILUS, KANT															
L 1	2	107	0°28N 12°70E	65	0000	090950	8-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	54K	675000	287	.7	21	-.52
CAM.NAD.= .28N 12.72E SWING= 95. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 1793.2 KM. SUN AZM= 88.5															
S. N. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. N. PART OF LAC 78 THEOPHILUS, KANT															
L 1	2	108	0°16N 13°26E	65	0000	090959	8-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	53K	662500	302	.2	21	-.52
CAM.NAD.= .16N 13.27E SWING= 110. PHASE= 68. EMIS.ANG.= 0. CAM.RAD.= 1792.2 KM. SUN AZM= 88.4															
S. N. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. N. PART OF LAC 78 THEOPHILUS, KANT															
L 1	2	109	0°04N 13°82E	65	0000	091008	8-24-66	LUNAR ORB LO.F=80MM B&W	- NONE	53K	662500	92	.4	22	-.52
CAM.NAD.= .04N 13.81E SWING= 260. PHASE= 68. EMIS.ANG.= 0. CAM.RAD.= 1792.2 KM. SUN AZM= 88.4															
S. N. PART OF LAC 60 J. CAESAR, SABINE, JANSEN & N. N. PART OF LAC 78 THEOPHILUS, KANT															



MIS SION	MAG ROLL	FR. PHOTO UK	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	T I L T A7	SUN SIDE. ANG. ANG. FR. ANG. VERT	FWD. LAP B. S
L 1	2	110	0.085	14.38E	65	0000	091017	8-24-66 LUNAR ORB LO.F=80MM B&W	- NONE	53K	662500	98	1.9 23	-.52
CAM.NAD.= .J85 14.35E SWING= 266. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 1792.2 KM. SUN AZM= 88.3														
N. W. PART OF LAC 78 THEOPHILUS, KANT S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN														
L 1	2	111	0.205	14.94E	65	0000	091026	8-24-66 LUNAR ORB LO.F=80MM B&W	- NONE	53K	662500	99	1.5 23	-.52
CAM.NAD.= .195 14.89E SWING= 267. PHASE= 65. EMIS.ANG.= 1. CAM.RAD.= 1792.2 KM. SUN AZM= 88.3														
N. W. PART OF LAC 78 THEOPHILUS, KANT S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN														
L 1	2	112	0.325	15.48E	65	0000	091035	8-24-66 LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	100	2.0 24	-.53
CAM.NAD.= .J15 15.42E SWING= 268. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 88.2														
N. W. PART OF LAC 78 THEOPHILUS, KANT S. W. PART OF LAC 60 J. CAESAR, SABINE, JANSEN														
L 2	2	88	0.71N	24.17E	67	0000	193800	11-20-66 LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	93	1.7 30	-.87
CAM.NAD.= .71N 24.12E SWING= 262. PHASE= 61. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.8														
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN N. E. PART OF LAC 78 THEOPHILUS, KANT														
L 2	2	89	0.68N	24.31E	67	0000	193802	11-20-66 LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	94	1.8 30	-.87
CAM.NAD.= .68N 24.26E SWING= 262. PHASE= 61. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.8														
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN N. E. PART OF LAC 78 THEOPHILUS, KANT														
L 2	2	90	0.65N	24.45E	67	0000	193805	11-20-66 LUNAR ORB LO.F=80MM B&W	- NONE	52K	650000	95	1.9 31	-.87
CAM.NAD.= .65N 24.39E SWING= 263. PHASE= 61. EMIS.ANG.= 2. CAM.RAD.= 1791.2 KM. SUN AZM= 90.8														
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN N. E. PART OF LAC 78 THEOPHILUS, KANT														
L 2	2	91	0.62N	24.59E	67	0000	193807	11-20-66 LUNAR ORB LO.F=80MM B&W	- NONE	53K	662500	95	2.1 31	-.87
CAM.NAD.= .62N 24.53E SWING= 263. PHASE= 61. EMIS.ANG.= 2. CAM.RAD.= 1792.2 KM. SUN AZM= 90.7														
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN N. E. PART OF LAC 78 THEOPHILUS, KANT														
L 3	2	58	0.16N	25.02E	52	0000	135051	2-16-67 LUNAR ORB LO.F=80MM B&W	- NONE	51K	637500	198	14.0 18	-.87
CAM.NAD.= .56N 25.16E SWING= 358. PHASE= 68. EMIS.ANG.= 14. CAM.RAD.= 1790.2 KM. SUN AZM= 91.6														
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN N. E. PART OF LAC 78 THEOPHILUS, KANT														
L 3	2	60	0.51N	24.22E	53	0000	171938	2-16-67 LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	19	11.1 19	-.88
CAM.NAD.= .26N 24.11E SWING= 178. PHASE= 74. EMIS.ANG.= 11. CAM.RAD.= 1789.2 KM. SUN AZM= 91.8														
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN N. E. PART OF LAC 78 THEOPHILUS, KANT														
L 3	2	63	0.36N	24.60E	53	0000	171945	2-16-67 LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	21	11.0 20	-.88
CAM.NAD.= .06N 24.48E SWING= 180. PHASE= 74. EMIS.ANG.= 11. CAM.RAD.= 1789.2 KM. SUN AZM= 91.7														
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN N. E. PART OF LAC 78 THEOPHILUS, KANT														
L 3	2	66	0.21N	25.00E	53	0000	171951	2-16-67 LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	23	11.1 20	-.88
CAM.NAD.= .095 24.87E SWING= 182. PHASE= 74. EMIS.ANG.= 11. CAM.RAD.= 1789.2 KM. SUN AZM= 91.7														
S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN N. E. PART OF LAC 78 THEOPHILUS, KANT														
L 3	2	68	0.30N	21.00E	54	0000	204751	2-16-67 LUNAR ORB LO.F=80MM B&W	- NONE	50K	625000	204	7.2 18	-.88
CAM.NAD.= .49N 21.00E SWING= 3. PHASE= 69. EMIS.ANG.= 7. CAM.RAD.= 1789.2 KM. SUN AZM= 91.7														
SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN 6 NORTHERN PART OF LAC 78 THEOPHILUS, KANT														

MIS SION	MAG ROLL	FR. OR MAIN	PHOTO LAT.	PRIN. LONG.	PT. N	URB N	GET TIMES-HH M SEC (ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT. TUDE M-H.MI K-KH.	SCALE AT PRIN. PT.	T I L T AZ FR.	SUN SIDE, ANG. VERT	SIDE, ANG. LAP R. R
L 3	1	70	0.10S	22.00E	54	...	204808		2-16-67	LUNAR ORB HI. 610MM B&W	- NONE	49K	R0328	195	7.3 19	-.00
CAM.NAD.= .11N 22.05E SWING= 354. PHASE= 70. EMIS.ANG.= 8. CAM.RAD.= 1788.2 KM. SUN AZM= 91.5																
NORTHERN PART OF LAC 78 THEOPHILUS, KANT & SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 3	2	70	0.10S	22.00E	54	...	204808		2-16-67	LUNAR ORB LO.F=80MM B&W	- NONE	49K	612500	195	7.3 19	-.52
CAM.NAD.= .10N 22.06E SWING= 355. PHASE= 69. EMIS.ANG.= 8. CAM.RAD.= 1788.2 KM. SUN AZM= 91.5																
NORTHERN PART OF LAC 78 THEOPHILUS, KANT & SOUTHERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN																
L 3	1	72	0.83S	24.32E	55	...	001749		2-17-67	LUNAR ORB HI. 610MM B&W	- NONE	50K	81947	21	27.2 23	-.00
CAM.NAD.= 1.46S 24.07E SWING= 181. PHASE= 76. EMIS.ANG.= 23. CAM.RAD.= 1789.2 KM. SUN AZM= 91.3																
N. E. PART OF LAC 78 THEOPHILUS, KANT																
L 3	2	78	10.27S	26.51E	58	...	104548		2-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	57K	712500	180	48.8 30	-.00
CAM.NAD.= 4.74S 26.54E SWING= 349. PHASE= 78. EMIS.ANG.= 74. CAM.RAD.= 1796.2 KM. SUN AZM= 85.7																
EASTERN PART OF LAC 78 THEOPHILUS, KANT & S. W. PART OF LAC 79 COLOMBO, NE & N. W. PART OF LAC 97 FRACASTORIUS																
L 3	1	79	1.81S	17.65E	59	...	141215		2-17-67	LUNAR ORB HI. 610MM B&W	- NONE	48K	78689	20	7.4 23	-.00
CAM.NAD.= 2.00S 17.58E SWING= 178. PHASE= 69. EMIS.ANG.= 8. CAM.RAD.= 1787.2 KM. SUN AZM= 90.8																
NORTHERN PART OF LAC 78 THEOPHILUS, KANT																
L 3	2	79	1.81S	17.66E	59	...	141216		2-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	48K	600000	19	7.4 23	-.00
CAM.NAD.= 2.00S 17.59E SWING= 177. PHASE= 69. EMIS.ANG.= 8. CAM.RAD.= 1787.2 KM. SUN AZM= 90.8																
NORTHERN PART OF LAC 78 THEOPHILUS, KANT																
L 3	1	80	1.43S	12.94E	61	...	210904		2-17-67	LUNAR ORB HI. 610MM B&W	- NONE	47K	77049	25	4.4 22	-.00
CAM.NAD.= 1.54S 12.89E SWING= 185. PHASE= 70. EMIS.ANG.= 4. CAM.RAD.= 1786.2 KM. SUN AZM= 91.0																
N. W. PART OF LAC 78 THEOPHILUS, KANT																
L 3	2	80	1.43S	12.94E	61	...	210904		2-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	24	4.4 22	-.00
CAM.NAD.= 1.54S 12.89E SWING= 184. PHASE= 70. EMIS.ANG.= 4. CAM.RAD.= 1786.2 KM. SUN AZM= 91.0																
N. W. PART OF LAC 78 THEOPHILUS, KANT																
L 3	1	81	1.61S	13.40E	61	...	210912		2-17-67	LUNAR ORB HI. 610MM B&W	- NONE	47K	77049	32	4.4 23	-.00
CAM.NAD.= 1.72S 13.34E SWING= 191. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 1786.2 KM. SUN AZM= 90.9																
N. W. PART OF LAC 78 THEOPHILUS, KANT																
L 3	2	81	1.61S	13.41E	61	...	210912		2-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	30	4.5 23	-.13
CAM.NAD.= 1.72S 13.35E SWING= 190. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 1786.2 KM. SUN AZM= 90.9																
N. W. PART OF LAC 78 THEOPHILUS, KANT																
L 3	1	82	1.80S	13.87E	61	...	210920		2-17-67	LUNAR ORB HI. 610MM B&W	- NONE	47K	77049	38	4.6 23	-.00
CAM.NAD.= 1.89S 13.80E SWING= 197. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 1786.2 KM. SUN AZM= 90.8																
N. W. PART OF LAC 78 THEOPHILUS, KANT																
L 3	2	82	1.80S	13.88E	61	...	210920		2-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	47K	587500	36	4.6 23	-.52
CAM.NAD.= 1.90S 13.81E SWING= 196. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 1786.2 KM. SUN AZM= 90.8																
N. W. PART OF LAC 78 THEOPHILUS, KANT																

MIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE SCALE AT PRIN. PT.	TILT AZ	SUN SIDE ANG. ANG. FWD. FR. LAP VERT % R
L 3	1	83	1.98S	14.35E	61	***	210928	2-17-67 LUNAR ORB HI, 610MM B&W	- NONE	47K	77049	43 4.7 24 -...
CAM. RAD. = 2.08S 14.26E SWING = 203. PHASE = 70. EMIS. ANG. = 5. CAM. RAD. = 1786.2 KM. SUN AZM = 90.7												
H. N. PART OF LAC 78 THEOPHILUS, KANT												
L 3	2	83	1.98S	14.36E	61	***	210928	2-17-67 LUNAR ORB LO, F=80MM B&W	- NONE	47K	587500	42 4.7 24 -52
CAM. RAD. = 2.08S 14.27E SWING = 202. PHASE = 70. EMIS. ANG. = 5. CAM. RAD. = 1786.2 KM. SUN AZM = 90.7												
N. W. PART OF LAC 78 THEOPHILUS, KANT												
L 4	2	71	43.68S	46.67E	14	***	163344	5-15-67 LUNAR ORB LO, F=80MM B&W	- NONE	2972K	37150000	103 5.5 24 -90
CAM. RAD. = 42.22S 33.74E SWING = 301. PHASE = 80. EMIS. ANG. = 15. CAM. RAD. = 4711.2 KM. SUN AZM = 64.7												
LAC 114 RHEITA, JA ; >1/2 MOON SPHERE ; LAC 78 THEOPHILUS ; LAC 79 COLOMBO, NE. M. NECTAR ; LAC 144 SCOTT, S. POLE												
L 4	2	76	42.77S	37.87E	15	***	043514	5-16-67 LUNAR ORB LO, F=80MM B&W	- NONE	2972K	37150000	97 4.5 22 -...
CAM. RAD. = 42.21S 27.23E SWING = 296. PHASE = 79. EMIS. ANG. = 12. CAM. RAD. = 4711.2 KM. SUN AZM = 67.2												
LAC 114 RHEITA, JA ; >1/2 MOON SPHERE ; LAC 78 THEOPHILUS ; LAC 112 TYCHO, STOFER ; LAC 144 SCOTT, S. POLE												
L 4	1	77	14.93S	30.15E	15	***	050718	5-16-67 LUNAR ORB HI, 610MM B&W	- NONE	2730K	4475410	141 .4 23 -49
CAM. RAD. = 14.46S 29.77E SWING = 327. PHASE = 68. EMIS. ANG. = 1. CAM. RAD. = 4469.2 KM. SUN AZM = 83.0												
LAC 79 COLOMBO, NE ; LAC 78 THEOPHILUS ; LAC 96 ALTAI SCAR ; LAC 97 FRACASTORIUS, S. NECTAR ; LAC 60 J. CAESAR, SABINE												
L 4	2	77	14.92S	30.15E	15	***	050718	5-16-67 LUNAR ORB LO, F=80MM B&W	- NONE	2730K	34125000	141 .4 23 -...
CAM. RAD. = 14.46S 29.77E SWING = 327. PHASE = 68. EMIS. ANG. = 1. CAM. RAD. = 4469.2 KM. SUN AZM = 83.0												
DEGRADED NEGATIVE ; LAC 79 COLOMBO, NE ; >1/2 MOON SPHERE ; LAC 42 H. SERENITY, DARES ; LAC 78 THEOPHILUS, KA												
L 4	1	78	13.30N	30.21E	15	***	053813	5-16-67 LUNAR ORB HI, 610MM B&W	- NONE	2722K	4462295	248 1.0 24 -40
CAM. RAD. = 13.86N 31.68E SWING = 63. PHASE = 64. EMIS. ANG. = 3. CAM. RAD. = 4461.2 KM. SUN AZM = 95.4												
LAC 61 TARUNTIUS, LYELL ; LAC 60 J. CAESAR, SABINE, JANSEN ; LAC 43 MACROBIUS, PROCLUS ; LAC 42 H. SERENITY, D												
L 4	2	79	41.83N	39.05E	15	***	061131	5-16-67 LUNAR ORB LO, F=80MM B&W	- NONE	2964K	37050000	103 2.1 25 -90
CAM. RAD. = 42.79N 34.33E SWING = 268. PHASE = 71. EMIS. ANG. = 6. CAM. RAD. = 4703.2 KM. SUN AZM = 113.3												
LAC 27 GEMINUS, ATLAS ; >1/2 MOON SPHERE ; LAC 1 N. POLE NEAR SIDE BY ; LAC 13 ARISTOTE., M. FRIG ; LAC 78 THEOPHILUS												
L 4	2	83	42.94S	32.82E	16	***	163652	5-16-67 LUNAR ORB LO, F=80MM B&W	- NONE	2972K	37150000	98 5.1 23 -...
CAM. RAD. = 42.23S 20.71E SWING = 297. PHASE = 80. EMIS. ANG. = 14. CAM. RAD. = 4711.2 KM. SUN AZM = 66.3												
LAC 113 MAUROLYCUS, RAB. LEVI ; >1/2 MOON SPHERE ; LAC 78 THEOPHILUS ; LAC 116 M. AUSTRA ; LAC 140 SCHR ; LAC 60 J. CAE												
L 4	1	84	15.19S	24.28E	16	***	170857	5-16-67 LUNAR ORB HI, 610MM B&W	- NONE	2727K	4470492	124 .8 23 -47
CAM. RAD. = 14.45S 23.18E SWING = 310. PHASE = 68. EMIS. ANG. = 2. CAM. RAD. = 4466.2 KM. SUN AZM = 87.8												
EASTERN PART OF LAC 78 THEOPHILUS ; EASTERN PART OF LAC 96 ALTAI SCAR ; LAC 60 J. CAESAR, SABINE, JA ; LAC 97 FRACASTORIUS,												
L 4	2	84	15.18S	24.28E	16	***	170857	5-16-67 LUNAR ORB LO, F=80MM B&W	- NONE	2727K	34087500	124 .8 23 -...
CAM. RAD. = 14.45S 23.18E SWING = 310. PHASE = 68. EMIS. ANG. = 2. CAM. RAD. = 4466.2 KM. SUN AZM = 87.8												
LAC 78 THEOPHILUS ; >1/2 MOON SPHERE ; LAC 41 APENNINES, ; LAC 13 ARISTOTE., M. FRIG ; LAC 113 MAUROLYCUS, R												
L 4	1	85	12.49N	23.94E	16	***	173950	5-16-67 LUNAR ORB HI, 610MM B&W	- NONE	2717K	4454098	230 .9 24 -31
CAM. RAD. = 13.88N 25.04E SWING = 44. PHASE = 65. EMIS. ANG. = 2. CAM. RAD. = 4456.2 KM. SUN AZM = 95.2												
EASTERN PART OF LAC 60 J. CAESAR, SABINE, JANSEN ; EASTERN PART OF LAC 42 H. SERENITY, DARES ; LAC 78 THEOPHILUS & LAC 43 JA												

MIS SION	ROLL	FR. F. AUTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE	SCALE PRIN.	AT PT.	T ANG.	L ANG.	SUN FWD. LAP S. R	SIDE.
L 4	2	855	13.00N	23.94E	16	***	173950	5-16-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2717K	33942500	230	09	24	-0.27
		CAM.NAD.= 13.89N		25.04E	SWING= 44.		PHASE= 65. EMIS.ANG.= 2.		CAM.RAD.= 4456.2 KM.		SUN AZM= 95.2					
		DEGRADED NEGATIVE				; LAC 60 J. CAESAR, SABINE, JANSEN ; LAC 78 THEOPHILUS, KANT								; LAC 79 COLOMBO, NE. M		
L 4	1	89	15.07S	16.90E	17	***	051044	5-17-67 LUNAR ORB HI. 610MM B&W	-	NONE	2724K	4465574	154	05	22	-0.48
		CAM.NAD.= 14.45S		16.59E	SWING= 340.		PHASE= 68. EMIS.ANG.= 1.		CAM.RAD.= 4463.2 KM.		SUN AZM= 83.2					
		WESTERN PART OF LAC 78 THEOPHILUS, KANT				; CENTRAL PART OF LAC 96 ALTAI SCAR & S. W. PART OF LAC 60 J. CAESAR, SAB										
L 4	2	89	15.07S	16.90E	17	***	051044	5-17-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2724K	34050000	154	05	22	-0.00
		CAM.NAD.= 14.45S		16.59E	SWING= 340.		PHASE= 68. EMIS.ANG.= 1.		CAM.RAD.= 4463.2 KM.		SUN AZM= 83.2					
		LAC 78 THEOPHILUS ;		W>1/2 MOON SPHERE ;		LAC 14 ENDYMION, S ; LAC 42 M. SERENITY, DAWES								; LAC 113 MAUROLYCUS, R		
L 4	1	90	13.75N	15.87E	17	***	054135	5-17-67 LUNAR ORB HI. 610MM B&W	-	NONE	2711K	4444262	266	10	22	-0.27
		CAM.NAD.= 13.89N		18.40E	SWING= 82.		PHASE= 64. EMIS.ANG.= 4.		CAM.RAD.= 4450.2 KM.		SUN AZM= 95.0					
		WESTERN PART OF LAC 60 J. CAESAR, SABINE, J				; WESTERN PART OF LAC 42 M. SERENITY, DAWES & N. W. PART OF LAC 78 THEOPHILUS, KANT										
L 4	2	95	42.53S	18.70E	18	***	164034	5-17-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2975K	37187500	95	40	22	-0.00
		CAM.NAD.= 42.27S		7.64E	SWING= 294.		PHASE= 80. EMIS.ANG.= 13.		CAM.RAD.= 4714.2 KM.		SUN AZM= 67.9					
		LAC 113 MAUROLYCUS, HAB. LEVI				; W>1/2 MOON SPHERE ; LAC 140 SCHRÖDING ; LAC 129 M. AUSTRA ; LAC 78 THEOP & LAC 112 TYCH										
L 4	1	96	15.18S	10.67E	18	***	171241	5-17-67 LUNAR ORB HI. 610MM B&W	-	NONE	2722K	4462295	138	06	22	-0.46
		CAM.NAD.= 14.45S		9.99E	SWING= 324.		PHASE= 69. EMIS.ANG.= 2.		CAM.RAD.= 4461.2 KM.		SUN AZM= 83.2					
		LAC 78 THEOPHILUS ; LAC 77 PTOLMAEUS ; LAC 95 PURBACH, AR ; LAC 96 ALTAI SCARP, GEBER												; LAC 59 M. VAPORUM, HYG		
L 4	2	96	15.17S	10.66E	18	***	171241	5-17-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2722K	34025000	138	06	22	-0.87
		CAM.NAD.= 14.45S		9.99E	SWING= 324.		PHASE= 69. EMIS.ANG.= 2.		CAM.RAD.= 4461.2 KM.		SUN AZM= 83.2					
		LAC 78 THEOPHILUS ;		W>1/2 MOON SPHERE ;		LAC 41 APENNINES, ; LAC 26 EUDOXUS, BURG								; LAC 126 CLAVIUS, MAGI		
L 4	1	97	12.97N	9.66E	18	***	174328	5-17-67 LUNAR ORB HI. 610MM B&W	-	NONE	2705K	4434426	245	10	22	-0.17
		CAM.NAD.= 13.90N		11.76E	SWING= 60.		PHASE= 65. EMIS.ANG.= 4.		CAM.RAD.= 4444.2 KM.		SUN AZM= 94.7					
		LAC 59 M. VAPORUM, HYGINUS				; LAC 60 J. CAESAR, SABINE, JANSEN ; LAC 42 M. SERENITY, DAWES								; LAC 41 APENNINES, HA		
L 4	2	98	40.37N	18.53E	18	***	181626	5-17-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2938K	36725000	118	20	23	-0.27
		CAM.NAD.= 40.81N		14.21E	SWING= 282.		PHASE= 72. EMIS.ANG.= 6.		CAM.RAD.= 4677.2 KM.		SUN AZM= 111.3					
		LAC 26 EUDOXUS, BURG ;		W>1/2 MOON SPHERE ;		LAC 44 CLEOMEDES, ; LAC 78 THEOPHILUS, KANT								; LAC 1 N. POLE NEAR SID		
L 4	2	115	42.28N	2.67W	21	***	062212	5-19-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2905K	36312500	101	10	21	-0.21
		CAM.NAD.= 42.76N		5.70W	SWING= 266.		PHASE= 73. EMIS.ANG.= 9.		CAM.RAD.= 4644.2 KM.		SUN AZM= 109.5					
		LAC 25 CASSINI, AL ;		W>1/2 MOON SPHERE ;		LAC 76 HIPHAEUS M ; LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N								; LAC 16		
L 4	2	119	42.78S	7.44W	22	***	164855	5-19-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2991K	37387500	97	40	20	-0.00
		CAM.NAD.= 42.26S		18.74W	SWING= 295.		PHASE= 82. EMIS.ANG.= 13.		CAM.RAD.= 4730.2 KM.		SUN AZM= 69.1					
		LAC 112 TYCHU, STÖFLER				; W>1/2 MOON SPHERE		; LAC 144 SCOTT, S. POLF NEAR SIDE >6						; LAC 58 COPERNICUS, R		
L 5	2	52	2.92N	35.56E	28	***	193052	8-11-67 LUNAR ORB LO.F=80MM B&W	-	NONE	101K	1262500	269	51	17	-0.00
		CAM.NAD.= 2.96N		40.00E	SWING= 177.		PHASE= 17. EMIS.ANG.= 56.		CAM.RAD.= 1840.2 KM.		SUN AZM= 89.4					
		S. W. PART OF LAC 61 TARANTUS, LYELL				; S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN ; LAC 78 THEOPHILUS & LAC 79 CO										

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## LAC 78 THEOPHILUS, KANT

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHI	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T	I	L	T	SUN	SIDE,	
SUN	ROLL	OR	LAT.	LONG.	"	"	TIMES-HR	M	SEC	SENSOR	AND FILTER	TIDE	PRIN.	AZ	ANG.	ANG.	FWD.			
"	"	MAIN	"	"	"	"	(I=ESTIMATED)	"	"	TYPE	"	M=N.HI	PT.	FR.	VERT	"	"	"	"	
"	"	"	"	"	"	"	"	"	"	"	"	K*KM.	"	"	"	"	"	"	"	
L 5	2	64°	0.73N	25.05E	34	...	093653	8-12-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	98K 1225000	269	51.3	16	-..			
		CAM.NAD.=	.78N	29.30E			SWING= 176.		PHASE= 18.	EMIS.ANG.= 55.	CAM.RAD.=	1837.2 KM.		SUN	AZM= 88.7					
			SOUTHERN PART OF LAC 60 J.CAESAR, SABINE, JANSEN																	
L 5	2	71°	0.40N	23.81E	37	...	191002	8-12-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	98K 1225000	268	3.6	20	-..			
		CAM.NAD.=	.41N	24.02E			SWING= 174.		PHASE= 66.	EMIS.ANG.= 4.	CAM.RAD.=	1837.2 KM.		SUN	AZM= 88.6					
			S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN																	
L 5	2	72°	0.67N	23.84E	37	...	191007	8-12-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	98K 1225000	272	3.5	20	-..			
		CAM.NAD.=	.66N	24.04E			SWING= 178.		PHASE= 66.	EMIS.ANG.= 4.	CAM.RAD.=	1837.2 KM.		SUN	AZM= 88.7					
			S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN																	
L 5	2	73°	0.94N	23.86E	37	...	191011	8-12-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	98K 1225000	277	3.5	20	-..			
		CAM.NAD.=	.91N	24.06E			SWING= 183.		PHASE= 66.	EMIS.ANG.= 4.	CAM.RAD.=	1837.2 KM.		SUN	AZM= 88.8					
			S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN																	
L 5	2	75°	0.40N	23.85E	38	...	222169	8-12-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	98K 1225000	95	25.7	22	-..			
		CAM.NAD.=	.55N	22.28E			SWING= 1.		PHASE= 95.	EMIS.ANG.= 27.	CAM.RAD.=	1837.2 KM.		SUN	AZM= 88.6					
			S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN																	
L 5	2	76°	0.69N	23.87E	38	...	222114	8-12-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	98K 1225000	94	25.7	22	-..			
		CAM.NAD.=	.82N	22.30E			SWING= 0.		PHASE= 95.	EMIS.ANG.= 27.	CAM.RAD.=	1837.2 KM.		SUN	AZM= 88.7					
			S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN																	
L 5	2	77°	0.99N	23.90E	38	...	222119	8-12-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	98K 1225000	94	25.7	22	-..			
		CAM.NAD.=	1.10N	22.33E			SWING= 360.		PHASE= 95.	EMIS.ANG.= 27.	CAM.RAD.=	1837.2 KM.		SUN	AZM= 88.8					
			S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN																	
L 5	2	78°	1.30N	23.92E	38	...	222124	8-12-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	98K 1225000	93	25.7	22	-..			
		CAM.NAD.=	1.34N	22.35E			SWING= 359.		PHASE= 95.	EMIS.ANG.= 27.	CAM.RAD.=	1837.2 KM.		SUN	AZM= 89.0					
			S. E. PART OF LAC 60 J.CAESAR, SABINE, JANSEN																	
L 5	1	84	14.95S	13.91E	42	...	110058	8-13-67	LUNAR	ORB HI. 610MM B&W	-	NONE	115K 188525	220	2.4	17	-..			
		CAM.NAD.=	14.82S	14.02E			SWING= 126.		PHASE= 71.	EMIS.ANG.= 3.	CAM.RAD.=	1854.2 KM.		SUN	AZM= 83.7					
			S. W. PART OF LAC 78 THEOPHILUS, KANT																	
L 5	2	84	14.94S	13.90E	42	...	110058	8-13-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	115K 1437500	223	2.5	17	-..			
		CAM.NAD.=	14.82S	14.02E			SWING= 129.		PHASE= 71.	EMIS.ANG.= 3.	CAM.RAD.=	1854.2 KM.		SUN	AZM= 83.7					
			S. W. PART OF LAC 78 THEOPHILUS, KANT																	

TOTAL PHOTOS IN THIS GROUP = 79

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-)(+)( ) ( ) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G, CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTRAEKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIUGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NFG. AT PP IF ALT NOT D.O

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	I	L	T	SUN	SIDE,
SION	ROLL	OR	LA.	"	"	"	TIMES-HR	M	SEC	SENSOR	AND FILTER	TIME	PRIN.	AZ	ANG.	ANG.	FWD.			
"	"	MAIN	LUNG.	"	"	"	(I=ESTIMATED)	"	"	TYPE	"	M=N=M	PT.	FR.	ANG.	ANG.	LAP			
"	"	"	"	"	"	"	"	"	"	"	"	K=KM.	"	"	VERT	"	"	"	"	"
L 1	2	31	2.54N	47.96E	39	***	****	134659	8-20-66	LUNAR ORB LO.F=80MM B&W	-	NONE	243K	30375.0	234	11.0	10	-..		
CAM.NAD.= 3.44N 49.24E SWING= 53. PHASE= 70. EMIS.ANG.= 13. CAM.RAD.= 1982.2 KM. SUN AZM= 88.9																				
SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL 1 NORTHERN PART OF LAC 79 COLUMBO,NE & LAC 62 M.UNDARUM,S.CRISIUM																				
L 1	2	32*	2.15N	49.95E	39	***	****	134733	8-20-66	LUNAR ORB LO.F=80MM B&W	-	NONE	238K	2975000	227	9.9	12	-.65		
CAM.NAD.= 3.08N 50.96E SWING= 46. PHASE= 70. EMIS.ANG.= 11. CAM.RAD.= 1977.2 KM. SUN AZM= 88.9																				
S. E. PART OF LAC 61 TARUNTIUS,LYELL 1 LAC 62 M.UNDARUM,S.CRISIUM & LAC 79 COLUMBO,NE																				
L 1	2	41	3.30N	39.16E	41	***	****	210037	8-20-66	LUNAR ORB LO.F=80MM B&W	-	NONE	256K	3200000	244	14.7	5	-...		
CAM.NAD.= 4.28N 41.17E SWING= 63. PHASE= 70. EMIS.ANG.= 17. CAM.RAD.= 1995.2 KM. SUN AZM= 88.8																				
SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL 6 NORTHERN PART OF LAC 79 COLUMBO,NE.M.NECTAR																				
L 1	2	42*	4.35N	31.87E	43	***	****	041441	8-21-66	LUNAR ORB LO.F=80MM B&W	-	NONE	265K	3312500	259	16.5	1	-...		
CAM.NAD.= 4.82N 34.44E SWING= 80. PHASE= 70. EMIS.ANG.= 19. CAM.RAD.= 2004.2 KM. SUN AZM= 88.6																				
WESTERN PART OF LAC 61 TARUNTIUS,LYELL 1 EASTERN PART OF LAC 60 J.CAESAR,SABINE,JANSEN & LAC 79 COLUMBO,NE																				
L 1	2	50	0.61S	42.34E	51	***	****	082413	8-22-66	LUNAR ORB LO.F=80MM B&W	-	NONE	60K	750000	155	13.1	26	-...		
CAM.NAD.= .19S 42.15E SWING= 332. PHASE= 70. EMIS.ANG.= 13. CAM.RAD.= 1799.2 KM. SUN AZM= 88.0																				
N. E. PART OF LAC 79 COLUMBO,NE.M.NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS,LYELL																				
L 1	2	51	0.70S	42.76E	51	***	****	082420	8-22-66	LUNAR ORB LO.F=80MM B&W	-	NONE	60K	750000	153	13.3	26	-.70		
CAM.NAD.= .28S 42.55E SWING= 330. PHASE= 70. EMIS.ANG.= 14. CAM.RAD.= 1799.2 KM. SUN AZM= 88.0																				
NORTHERN PART OF LAC 79 COLUMBO,NE.M.NECTAR																				
L 1	2	52	0.69S	40.84E	53	***	****	152259	8-22-66	LUNAR ORB LO.F=80MM B&W	-	NONE	59K	737500	314	1.0	28	-...		
CAM.NAD.= .72S 40.86E SWING= 122. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1798.2 KM. SUN AZM= 87.9																				
NORTHERN PART OF LAC 79 COLUMBO,NE.M.NECTAR 6 SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL																				
L 1	2	53	0.73S	40.98E	53	***	****	152301	8-22-66	LUNAR ORB LO.F=80MM B&W	-	NONE	59K	737500	319	.9	28	-.88		
CAM.NAD.= .75S 41.00E SWING= 127. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1798.2 KM. SUN AZM= 87.9																				
NORTHERN PART OF LAC 79 COLUMBO,NE.M.NECTAR 6 SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL																				
L 1	2	54*	0.76S	41.13E	53	***	****	152303	8-22-66	LUNAR ORB LO.F=80MM B&W	-	NONE	60K	750000	325	.8	28	-.88		
CAM.NAD.= .78S 41.15E SWING= 133. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.9																				
NORTHERN PART OF LAC 79 COLUMBO,NE.M.NECTAR 6 SOUTHERN PART OF LAC 61 TARUNTIUS,LYELL																				

MIS SION	MAG ROLL	FR, PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR M SEC (ESTIMATED)	GHI	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N, MI K=KM.	SCALE AT PRIN. PT.	T 1 L T AZ ANG. FR. ANG. VERT	SUN SIDE, FWD. LAP R
L 1	2	55	0.79S 41.28E	53	000 0000	152306	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K	750000	333 .7 28	- .88
CAM.NAD.= .81S 41.29E SWING= 142. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.9													
NORTHERN PART OF LAC 79 COLUMBO, NE.M.NECTAR 6 SOUTHERN PART OF LAC 61 TARUNTIUS, LYELL													
L 1	2	56	0.82S 41.43E	53	000 0000	152308	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K	750000	344 .6 28	- .88
CAM.NAD.= .84S 41.44E SWING= 152. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.9													
NORTHERN PART OF LAC 79 COLUMBO, NE.M.NECTAR 6 SOUTHERN PART OF LAC 61 TARUNTIUS, LYELL													
L 1	2	57	0.85S 41.58E	53	000 0000	152311	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K	750000	358 .6 28	- .88
CAM.NAD.= .87S 41.58E SWING= 166. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.8													
NORTHERN PART OF LAC 79 COLUMBO, NE.M.NECTAR													
L 1	2	58	0.89S 41.73E	53	000 0000	152313	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K	750000	13 .5 29	- .88
CAM.NAD.= .91S 41.73E SWING= 181. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.8													
NORTHERN PART OF LAC 79 COLUMBO, NE.M.NECTAR													
L 1	2	59	0.92S 41.88E	53	000 0000	152316	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K	750000	78 .6 29	- .88
CAM.NAD.= .94S 41.87E SWING= 196. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.8													
NORTHERN PART OF LAC 79 COLUMBO, NE.M.NECTAR													
L 1	2	60	0.95S 42.03E	53	000 0000	152318	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K	750000	41 .6 29	- .88
CAM.NAD.= .97S 42.02E SWING= 209. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.8													
NORTHERN PART OF LAC 79 COLUMBO, NE.M.NECTAR													
L 1	2	61	0.98S 42.18E	53	000 0000	152320	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K	750000	52 .7 29	- .88
CAM.NAD.= 1.00S 42.16E SWING= 220. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.7													
NORTHERN PART OF LAC 79 COLUMBO, NE.M.NECTAR													
L 1	2	62	1.02S 42.33E	53	000 0000	152323	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K	750000	60 .8 29	- .88
CAM.NAD.= 1.03S 42.31E SWING= 228. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.7													
NORTHERN PART OF LAC 79 COLUMBO, NE.M.NECTAR													
L 1	2	63	1.05S 42.49E	53	000 0000	152325	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K	750000	66 .9 29	- .88
CAM.NAD.= 1.06S 42.46E SWING= 234. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.7													
NORTHERN PART OF LAC 79 COLUMBO, NE.M.NECTAR													
L 1	2	64	1.08S 42.64E	53	000 0000	152328	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K	750000	70 1.1 29	- .88
CAM.NAD.= 1.09S 42.60E SWING= 239. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.7													
NORTHERN PART OF LAC 79 COLUMBO, NE.M.NECTAR													
L 1	2	65	1.11S 42.79E	53	000 0000	152330	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K	750000	74 1.2 30	- .88
CAM.NAD.= 1.12S 42.75E SWING= 242. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.6													
N. E. PART OF LAC 79 COLUMBO, NE.M.NECTAR													
L 1	2	66	1.15S 42.94E	53	000 0000	152333	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K	750000	77 1.3 30	- .88
CAM.NAD.= 1.16S 42.90E SWING= 245. PHASE= 62. EMIS.ANG.= 1. CAM.RAD.= 1799.2 KM. SUN AZM= 87.6													
N. E. PART OF LAC 79 COLUMBO, NE.M.NECTAR													

LAC 79 CULUMBO, NE. M. NECTAR

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MIS	MAG	FR, PHOTO	PHIN, PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDF.
SIGN KULL	OR	LAT.	#	N	TIMES-HR M SEC	(ESTIMATED)		SENSOR	AND FILTER	TUDE PRIN.	AZ ANG.	ANG.
#	#	MAIN						TYPE		M=N.MI K=KM.	PT. VERT	FAD LAF
L 1	2	67	1.18S	43.10E	53 ***	152335	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	60K 750000	80	1.5 30
		CAM.NAD.=	1.19S	43.05E	SWING= 248.			PHASE= 62. EMIS.ANG.= 1.	CAM.RAD.=	1799.2 KM.	SUN AZM= 87.6	- .88
					N. E. PART OF	LAC 79 COLUMBO, NE. H. NECTAR						
L 1	2	68	0.25N	34.45E	54 ***	185045	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	59K 737500	289	1.4 23
		CAM.NAD.=	.24N	34.49E	SWING= 96.			PHASE= 66. EMIS.ANG.= 1.	CAM.RAD.=	1798.2 KM.	SUN AZM= 88.5	- .88
					S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 1	2	69	0.22N	34.60E	54 ***	185048	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	59K 737500	289	1.3 23
		CAM.NAD.=	.21N	34.64E	SWING= 97.			PHASE= 66. EMIS.ANG.= 1.	CAM.RAD.=	1798.2 KM.	SUN AZM= 88.5	- .88
					S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 1	2	70	0.17N	34.74E	54 ***	185050	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	59K 737500	290	1.2 23
		CAM.NAD.=	.18N	34.78E	SWING= 98.			PHASE= 66. EMIS.ANG.= 1.	CAM.RAD.=	1798.2 KM.	SUN AZM= 88.4	- .88
					S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 1	2	71	-.16N	34.89E	54 ***	185052	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	59K 737500	292	1.0 24
		CAM.NAD.=	.14N	34.92E	SWING= 99.			PHASE= 66. EMIS.ANG.= 1.	CAM.RAD.=	1798.2 KM.	SUN AZM= 88.4	- .88
					S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 1	2	72	0.13N	35.04E	54 ***	185055	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	58K 725000	293	.9 24
		CAM.NAD.=	.11N	35.07E	SWING= 101.			PHASE= 66. EMIS.ANG.= 1.	CAM.RAD.=	1797.2 KM.	SUN AZM= 88.4	- .88
					S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 1	2	73	0.09N	35.19E	54 ***	185057	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	58K 725000	296	.7 24
		CAM.NAD.=	.08N	35.21E	SWING= 104.			PHASE= 66. EMIS.ANG.= 1.	CAM.RAD.=	1797.2 KM.	SUN AZM= 88.4	- .88
					S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 1	2	74	0.06N	35.34E	54 ***	185100	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	58K 725000	299	.6 24
		CAM.NAD.=	.05N	35.35E	SWING= 107.			PHASE= 66. EMIS.ANG.= 1.	CAM.RAD.=	1797.2 KM.	SUN AZM= 88.4	- .88
					S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 1	2	75	0.03N	35.48E	54 ***	185102	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	58K 725000	305	.4 24
		CAM.NAD.=	.02N	35.50E	SWING= 113.			PHASE= 66. EMIS.ANG.= 1.	CAM.RAD.=	1797.2 KM.	SUN AZM= 88.4	- .88
					S. W. PART OF	LAC 61 TARUNTIUS, LYELL						
L 1	2	76	0.00S	35.63E	54 ***	185104	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	58K 725000	315	.3 24
		CAM.NAD.=	.01S	35.64E	SWING= 123.			PHASE= 66. EMIS.ANG.= 0.	CAM.RAD.=	1797.2 KM.	SUN AZM= 88.4	- .88
					N. W. PART OF	LAC 79 COLUMBO, NE. H. NECTAR						
L 1	2	77	0.03S	35.78E	54 ***	185107	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	58K 725000	338	.2 24
		CAM.NAD.=	.04S	35.78E	SWING= 146.			PHASE= 66. EMIS.ANG.= 0.	CAM.RAD.=	1797.2 KM.	SUN AZM= 88.3	- .88
					N. W. PART OF	LAC 79 COLUMBO, NE. H. NECTAR						
L 1	2	78	0.07S	35.93E	54 ***	185109	8-22-66	LUNAR ORB LO.F=80MM B&W	- NONE	58K 725000	21	.2 25
		CAM.NAD.=	.07S	35.93E	SWING= 189.			PHASE= 66. EMIS.ANG.= 0.	CAM.RAD.=	1797.2 KM.	SUN AZM= 88.3	- .88
					N. W. PART OF	LAC 79 COLUMBO, NE. H. NECTAR						



MIS SION	MAG #	FR. PHOTO OR #	PRIN. PT. LAT. #	ORB LONG. #	GET TIMES-HR (ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.M.I K=KM.	SCALE AT PRIN. PT.	TILT AZ	SUN SIDE ANG. FR.	SIDE ANG. VERT	FWD. LAP R. X	
L 1	2	79	0.105	36.08E	54	000 000	185112	8-22-66	LUNAR ORB LO.F=80MM B&W	-	NONE	58K	725000	57	+3 25	-.88
CAM.NAD.= .105 36.07E SWING= 225. PHASE= 66. EMIS.ANG.= 0. CAM.RAD.= 1797.2 KM. SUN AZH= 88.3																
N. N. PART OF LAC 79 COLUMBO, NE. M. NECTAR & S. N. PART OF LAC 61 TARUNTIUS, LYELL																
L 1	2	80	0.135	36.23E	54	000 000	185114	8-22-66	LUNAR ORB LO.F=80MM B&W	-	NONE	58K	725000	73	+4 25	-.88
CAM.NAD.= .135 36.21E SWING= 241. PHASE= 66. EMIS.ANG.= 0. CAM.RAD.= 1797.2 KM. SUN AZH= 88.3																
N. N. PART OF LAC 79 COLUMBO, NE. M. NECTAR & S. N. PART OF LAC 61 TARUNTIUS, LYELL																
L 1	2	81	0.165	36.37E	54	000 000	185116	8-22-66	LUNAR ORB LO.F=80MM B&W	-	NONE	58K	725000	81	+5 25	-.88
CAM.NAD.= .165 36.36E SWING= 249. PHASE= 66. EMIS.ANG.= 1. CAM.RAD.= 1797.2 KM. SUN AZH= 88.3																
N. N. PART OF LAC 79 COLUMBO, NE. M. NECTAR & S. N. PART OF LAC 61 TARUNTIUS, LYELL																
L 1	2	82	0.195	36.52E	54	000 000	185119	8-22-66	LUNAR ORB LO.F=80MM B&W	-	NONE	58K	725000	86	+6 25	-.88
CAM.NAD.= .195 36.50E SWING= 253. PHASE= 66. EMIS.ANG.= 1. CAM.RAD.= 1797.2 KM. SUN AZH= 88.3																
N. N. PART OF LAC 79 COLUMBO, NE. M. NECTAR & S. N. PART OF LAC 61 TARUNTIUS, LYELL																
L 1	2	83	0.225	36.67E	54	000 000	185121	8-22-66	LUNAR ORB LO.F=80MM B&W	-	NONE	58K	725000	89	+8 25	-.88
CAM.NAD.= .225 36.64E SWING= 256. PHASE= 66. EMIS.ANG.= 1. CAM.RAD.= 1797.2 KM. SUN AZH= 88.2																
N. N. PART OF LAC 79 COLUMBO, NE. M. NECTAR & S. N. PART OF LAC 61 TARUNTIUS, LYELL																
L 3	1	210	1.845	47.12E	44	000 000	100419	2-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	58K	950000	111	12.0 26	-.00
CAM.NAD.= 1.685 46.74E SWING= 271. PHASE= 75. EMIS.ANG.= 12. CAM.RAD.= 1797.2 KM. SUN AZH= 90.8																
N. E. PART OF LAC 79 COLUMBO, NE. M. NECTAR																
L 3	2	25	0.895	41.94E	45	000 000	133204	2-15-67	LUNAR ORB LO.F=80MM B&W	-	NONE	56K	700000	199	3.4 23	-.00
CAM.NAD.= .695 42.03E SWING= 359. PHASE= 66. EMIS.ANG.= 4. CAM.RAD.= 1795.2 KM. SUN AZH= 91.3																
NORTHERN PART OF LAC 79 COLUMBO, NE. M. NECTAR & SOUTHERN PART OF LAC 61 TARUNTIUS, LYELL																
L 3	1	260	0.855	42.12E	45	000 000	133206	2-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	56K	918000	196	3.7 23	-.13
CAM.NAD.= .745 42.16E SWING= 355. PHASE= 66. EMIS.ANG.= 4. CAM.RAD.= 1795.2 KM. SUN AZH= 91.3																
NORTHERN PART OF LAC 79 COLUMBO, NE. M. NECTAR																
L 3	2	31	1.115	42.80E	45	000 000	133217	2-15-67	LUNAR ORB LO.F=80MM B&W	-	NONE	56K	700000	186	3.7 24	-.88
CAM.NAD.= .995 42.82E SWING= 346. PHASE= 66. EMIS.ANG.= 4. CAM.RAD.= 1795.2 KM. SUN AZH= 91.2																
NORTHERN PART OF LAC 79 COLUMBO, NE. M. NECTAR																
L 3	1	32	1.165	42.93E	45	000 000	133220	2-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	56K	918000	183	3.8 24	-.14
CAM.NAD.= 1.045 42.94E SWING= 343. PHASE= 66. EMIS.ANG.= 4. CAM.RAD.= 1795.2 KM. SUN AZH= 91.1																
NORTHERN PART OF LAC 79 COLUMBO, NE. M. NECTAR																
L 3	1	330	0.945	42.54E	46	000 000	170114	2-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	57K	93443	72	19.7 25	-.00
CAM.NAD.= 1.565 42.28E SWING= 182. PHASE= 73. EMIS.ANG.= 20. CAM.RAD.= 1796.2 KM. SUN AZH= 91.2																
NORTHERN PART OF LAC 79 COLUMBO, NE. M. NECTAR																
L 3	2	33	0.945	42.54E	46	000 000	170114	2-15-67	LUNAR ORB LO.F=80MM B&W	-	NONE	57K	712500	72	19.8 25	-.00
CAM.NAD.= 1.575 42.28E SWING= 181. PHASE= 73. EMIS.ANG.= 20. CAM.RAD.= 1796.2 KM. SUN AZH= 91.2																
NORTHERN PART OF LAC 79 COLUMBO, NE. M. NECTAR & SOUTHERN PART OF LAC 61 TARUNTIUS, LYELL																

MIS SION	MAG ROLL	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB N	GET TIMES-HR (I=ESTIMATED)	GHI M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N+M1 K=KM.	SCALE AT PRIN. PT.	T AZ	L ANG.	T ANG.	SUN FWD. LAP S. S	SIDE.
L 3	1	35	1.05S 42.81E	46	000 0000	170119	2-15-67	LUNAR ORB HI. 610MM B&W	- NONE	57K	93443	23	19.7	26	-19	
CAM. RAD. = 1796.2 KM. SUN AZM = 91.2																
NORTHERN PART OF LAC 79 COLOMBU, NE. M. NECTAR																
L 3	1	36	1.10S 42.95E	46	000 0000	170121	2-15-67	LUNAR ORB HI. 610MM B&W	- NONE	57K	93443	23	19.7	26	-19	
CAM. RAD. = 1796.2 KM. SUN AZM = 91.1																
NORTHERN PART OF LAC 79 COLOMBU, NE. M. NECTAR																
L 3	2	78	10.27S 26.51E	58	000 0000	104548	2-17-67	LUNAR ORB LO. F=80MM B&W	- NONE	57K	712500	180	68.8	30	-00	
CAM. RAD. = 1796.2 KM. SUN AZM = 85.7																
EASTERN PART OF LAC 78 THEOPHILUS, KANT																
L 4	2	52	42.9JS 63.80E	11	000 0000	043024	5-14-67	LUNAR ORB LO. F=80MM B&W	- NONE	2976K	37200000	99	4.5	23	-00	
CAM. RAD. = 4715.2 KM. SUN AZM = 66.0																
LAC 115 FURNERUS ; >1/2 MOON SPHERE ; LUNAR S. HEMISPHE ; LAC 140 SCHRODINGER																
L 4	2	58	71.57S 54.40E	12	000 0000	155118	5-14-67	LUNAR ORB LO. F=80MM B&W	- NONE	3494K	43675000	100	2.7	9	-00	
CAM. RAD. = 5233.2 KM. SUN AZM = 62.0																
DEGRADED NEGATIVE ; LAC 138 MANZINUS ; >1/2 MOON SPHERE ; LAC 141 RAYLEIGH																
L 4	1	60	13.58S 48.79E	12	000 0000	170326	5-14-67	LUNAR ORB HI. 610MM B&W	- NONE	2738K	4488525	319	0.7	23	-51	
CAM. RAD. = 4477.2 KM. SUN AZM = 83.6																
LAC 79 COLOMBU, NE. M. NECTAR ; LAC 79 LANGRENUS, M. FERT. ; LAC 97 FRACASTORIUS, S. NECTAR ; LAC 98 PETAVIUS, HOL																
L 4	2	60	13.58S 48.79E	12	000 0000	170	5-14-67	LUNAR ORB LO. F=80MM B&W	- NONE	2738K	34225000	319	0.7	23	-90	
CAM. RAD. = 4477.2 KM. SUN AZM = 83.6																
LAC 79 COLOMBU, NE ; >1/2 MOON SPHERE ; LAC 27 GEMINUS, AT ; LAC 44 CLEOMEDES, M. CHRIS. ; LAC 114 RHETIA, JANSS																
L 4	1	61	14.14N 49.69E	12	000 0000	173428	5-14-67	LUNAR O HI. 610MM B&W	- NONE	2734K	4481967	278	1.2	25	-49	
CAM. RAD. = 4473.2 KM. SUN AZM = 96.2																
LAC 61 TARUNTIUS, LYELL ; LAC 62 M. UNDAUM, S. CRISIUM ; LAC 43 MACROBIUS, PROCLUS ; LAC 44 CLEOMEDES, M.																
L 4	1	65	14.9JS 43.30E	13	000 0000	050433	5-15-67	LUNAR ORB HI. 610MM B&W	- NONE	2735K	4483607	143	0.4	24	-49	
CAM. RAD. = 4474.2 KM. SUN AZM = 82.8																
EASTERN PART OF LAC 79 COLOMBU, NE ; EASTERN PART OF LAC 97 FRACASTORIUS, S. NECTAR ; LAC 61 TARUNTIUS, LYELL																
L 4	2	65	14.9JS 43.30E	13	000 0000	050433	5-15-67	LUNAR ORB LO. F=80MM B&W	- NONE	2735K	34187500	143	0.4	24	-55	
CAM. RAD. = 4474.2 KM. SUN AZM = 82.8																
DEGRADED NEGATIVE ; LAC 79 COLOMBU, NE. M. NECTAR																
L 4	1	66	13.47N 43.04E	13	000 0000	053534	5-15-67	LUNAR ORB HI. 610MM B&W	- NONE	2731K	4477049	250	1.2	24	-33	
CAM. RAD. = 4470.2 KM. SUN AZM = 95.7																
CENTRAL PART OF LAC 61 TARUNTIUS, LYELL ; EASTERN PART OF LAC 43 MACROBIUS, S. NECTAR ; LAC 79 COLOMBU, NE. M.																
L 4	2	71	43.68S 46.67E	14	000 0000	163344	5-15-67	LUNAR ORB LO. F=80MM B&W	- NONE	2972K	37150000	103	5.5	24	-90	
CAM. RAD. = 4711.2 KM. SUN AZM = 64.7																
LAC 114 RHETIA, JA ; >1/2 MOON SPHERE ; LAC 78 THEOPHILUS ; LAC 79 COLOMBU, NE. M. NECTAR ; LAC 144 SCOTT, S. POLE																

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HR M SEC (I=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.M K=KM.	SCALE PRIN. PT.	T I L T AZ FR. VERT	SUN SIDE, ANG. FR. VERT	SIDE, ANG. FR. VERT	F.O. LAP X: Y
L 4 1	72 15-775	37.86E	14 ***	170548	5-15-67	LUNAR ORB HI.	610MM B&W	-	NONE	2732K	4478689	131	1.2 24	-.47			
CAM.NAD.= 14.50S 36.35E SWING= 316. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4471.2 KM. SUN AZM= 82.2																	
WESTERN PART OF LAC 79 COLUMBO, NE; CENTRAL PART OF LAC 97 FRACASTORIUS, S. NECTAR & LAC 61 TARUNTIUS, LYELL																	
L 4 2	72 15-76S	37.86E	14 ***	170548	5-15-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2732K	34150000	131	1.2 24	-.70				
CAM.NAD.= 14.50S 36.35E SWING= 316. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4471.2 KM. SUN AZM= 82.2																	
LAC 79 COLUMBO, NE; >1/2 MOON SPHERE; LAC 43 MACROBIUS; LAC 80 LANGRENUS, M. FERT. & LAC 114 RHEITA, JANS																	
L 4 1	73 12.53N	37.59E	14 ***	173646	5-15-67	LUNAR ORB HI.	610MM B&W	-	NONE	2727K	4470492	209	.9 25	-.29			
CAM.NAD.= 13.82N 38.33E SWING= 23. PHASE= 64. EMIS.ANG.= 2. CAM.RAD.= 4466.2 KM. SUN AZM= 95.4																	
WESTERN PART OF LAC 61 TARUNTIUS, LYELL; CENTRAL PART OF LAC 43 MACROBIUS, & N. W. PART OF LAC 79 COLUMBO, NE. M																	
L 4 2	73 12.54N	37.59E	14 ***	173646	5-15-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2727K	34087500	209	.9 25	-.00				
CAM.NAD.= 13.82N 38.33E SWING= 23. PHASE= 64. EMIS.ANG.= 2. CAM.RAD.= 4466.2 KM. SUN AZM= 95.4																	
DEGRADED NEGATIVE; LAC 61 TARUNTIUS, LYELL; >1/2 MOON SPHERE & LAC 114 RHEITA, JANS																	
L 4 1	77 14.93S	30.15E	15 ***	050718	5-16-67	LUNAR ORB HI.	610MM B&W	-	NONE	2730K	4475410	141	.4 23	-.49			
CAM.NAD.= 14.46S 29.77E SWING= 327. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 4469.2 KM. SUN AZM= 83.0																	
LAC 79 COLUMBO, NE; LAC 78 THEOPHILUS; LAC 96 ALTAI SCAR; LAC 97 FRACASTORIUS, S. NECTAR & LAC 60 J. CAESAR, SARI																	
L 4 2	77 14.92S	30.15E	15 ***	050718	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2730K	34125000	141	.4 23	-.00				
CAM.NAD.= 14.46S 29.77E SWING= 327. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 4469.2 KM. SUN AZM= 83.0																	
DEGRADED NEGATIVE; LAC 79 COLUMBO, NE; >1/2 MOON SPHERE; LAC 42 M. SERENITY, DAWES & LAC 78 THEOPHILUS, KA																	
L 4 1	78 13.33N	30.21E	15 ***	053813	5-16-67	LUNAR ORB HI.	610MM B&W	-	NONE	2722K	4462295	248	1.0 24	-.40			
CAM.NAD.= 13.06N 31.68E SWING= 63. PHASE= 64. EMIS.ANG.= 3. CAM.RAD.= 4461.2 KM. SUN AZM= 95.4																	
LAC 61 TARUNTIUS, LYELL; LAC 60 J. CAESAR, SABINE, JANSEN; LAC 43 MACROBIUS, PROCLUS & LAC 42 M. SERENITY, D																	
L 4 2	85 13.00N	23.94E	16 ***	173950	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2717K	33962500	230	.9 24	-.27				
CAM.NAD.= 13.89N 25.04E SWING= 44. PHASE= 65. EMIS.ANG.= 2. CAM.RAD.= 4456.2 KM. SUN AZM= 15.2																	
DEGRADED NEGATIVE; LAC 60 J. CAESAR, SABINE, JANSEN; LAC 78 THEOPHILUS, KANT & LAC 79 COLUMBO, NE. M																	
L 4 2	86 41.02N	31.24E	16 ***	181300	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2956K	34950000	122	1.9 24	-.90				
CAM.NAD.= 42.80N 27.61E SWING= 286. PHASE= 71. EMIS.ANG.= 5. CAM.RAD.= 4695.2 KM. SUN AZM= 111.7																	
LAC 26 EUDOXUS, BU; >1/2 MOON SPHERE; LAC 16; LAC 5 PETERMANN, HAYN & LAC 44 CLEOMEDES, M.C																	
L 4 2	88 42.69S	24.94E	17 ***	043838	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2972K	37162500	94	4.6 22	-.00				
CAM.NAD.= 42.26S 14.18E SWING= 295. PHASE= 80. EMIS.ANG.= 13. CAM.RAD.= 4712.2 KM. SUN AZM= 67.8																	
LAC 113 MAHOLYCUS, XAB. LEVI; >1/2 MOON SPHERE; LAC 140 SCHRODING; LAC 129 M. AUSTRA; LAC 79 COLUMBO, NE. M & LAC 60 J. CAE																	
L 4 2	101 15.19S	3.83E	19 ***	051444	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2720K	34000000	150	.5 21	-.00				
CAM.NAD.= 14.45S 3.38E SWING= 336. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 4459.2 KM. SUN AZM= 83.4																	
LAC 77 PTOLMAEUS; >1/2 MOON SPHERE; LAC 41 APENNINES; LAC 43 MACROBIUS, PROCLUS & LAC 126 CLAVIUS, MAGI																	
L 4 2	107 42.40S	6.45E	20 ***	164442	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2082K	37275000	94	5.0 22	-.00				
CAM.NAD.= 42.26S 5.42N SWING= 293. PHASE= 81. EMIS.ANG.= 14. CAM.RAD.= 4721.2 KM. SUN AZM= 67.9																	
LAC 112 TYCHO, STOFER; >1/2 MOON SPHERE; LAC 59 M. VAPORUM, HYGINUS & LAC 79 COLUMBO, NE. M																	

THIS MAG		FR. PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTITUDE	SCALE AT	TILT	SUN SIDE,				
SION ROLL		OR	LAT.	"	TIMES-HR M SEC			SENSOR		AND FILTER	TUDE	PRIN.	A7	ANG. ANG. FWD.			
N	N	MAIN	LONG.		(I=ESTIMATED)			TYPE			M=N.MI K=KM.	PT.		FR. VERT	LAP		
L 4	2	1105	42.60N	3.35E	20	0000	182013	5-18-67 LUNAR ORB	LO.F=80MM B&W	-	NONE	2916K	36450000	94	1.1 21	-1.18	
		CAM.NAD.= 42.77N		0.86E		SWING= 259.		PHASE= 72.		EMIS.ANG.= 3.		CAM.RAD.= 4655.2 KM.		SUN AZM= 109.6			
		UNGRADED NEGATIVE		1		LAC 25 CASSINI,AL		1		Q>1/2 MOON SPHERE		1		LAC 1 N.POLE NEAR SIDE		BYRD,PF,ARY >80 N & LAC 79 COLOMBO,NE.M.	
L 5	1	38	0.95S	49.14E	19	0000	094936	8-10-67 LUNAR ORB	HI. 610MM B&W	-	NONE	103K	168852	269	59.4 16	-0.00	
		CAM.NAD.= .92S		55.52E		SWING= 177.		PHASE= 8.		EMIS.ANG.= 66.		CAM.RAD.= 1842.2 KM.		SUN AZM= 88.2			
		N. E. PART OF		LAC 79 COLOMBO,NE.M.		NECTAR		6		N. W. PART OF		LAC 60 LANGRENUS,M.		FFERT.			
L 5	2	38	0.93S	49.10E	19	0000	094936	8-10-67 LUNAR ORB	LO.F=80MM B&W	-	NONE	103K	1287500	269	59.5 16	-0.00	
		CAM.NAD.= .91S		55.52E		SWING= 177.		PHASE= 8.		EMIS.ANG.= 66.		CAM.RAD.= 1842.2 KM.		SUN AZM= 88.2			
		N. E. PART OF		LAC 79 COLOMBO,NE		1		SOUTHERN PART OF		LAC 61 TARUNTIUS,LYELL		6		LAC 62 M.UNDARUM,S.		CRISIUM	
L 5	1	41	2.06S	46.97E	21	0000	161126	8-10-67 LUNAR ORB	HI. 610MM B&W	-	NONE	103K	168852	274	53.5 17	-0.00	
		CAM.NAD.= 2.41S		51.87E		SWING= 179.		PHASE= 15.		EMIS.ANG.= 58.		CAM.RAD.= 1842.2 KM.		SUN AZM= 87.8			
		N. E. PART OF		LAC 79 COLOMBO,NE.M.		NECTAR											
L 5	2	41	2.04S	46.94E	21	0000	161127	8-10-67 LUNAR ORB	LO.F=80MM B&W	-	NONE	103K	1287500	274	53.7 17	-0.00	
		CAM.NAD.= 2.40S		51.87E		SWING= 179.		PHASE= 15.		EMIS.ANG.= 59.		CAM.RAD.= 1842.2 KM.		SUN AZM= 87.8			
		NORTHERN PART OF		LAC 79 COLOMBO,NE.M.		NECTAR		6		SOUTHERN PART OF		LAC 61 TARUNTIUS,LYELL					
L 5	1	42	0.99S	44.10E	23	0000	223409	8-10-67 LUNAR ORB	HI. 610MM B&W	-	NONE	102K	167213	268	50.9 18	-0.00	
		CAM.NAD.= .89S		48.48E		SWING= 176.		PHASE= 17.		EMIS.ANG.= 55.		CAM.RAD.= 1841.2 KM.		SUN AZM= 88.2			
		N. E. PART OF		LAC 79 COLOMBO,NE.M.		NECTAR											
L 5	2	42	0.98S	44.08E	23	0000	223409	8-10-67 LUNAR ORB	LO.F=80MM B&W	-	NONE	102K	1275000	268	51.1 18	-0.00	
		CAM.NAD.= .88S		48.48E		SWING= 176.		PHASE= 17.		EMIS.ANG.= 55.		CAM.RAD.= 1841.2 KM.		SUN AZM= 88.2			
		NORTHERN PART OF		LAC 79 COLOMBO,NE.M.		NECTAR		6		SOUTHERN PART OF		LAC 61 TARUNTIUS,LYELL					
L 5	1	44	1.25S	42.89E	26	0000	080725	8-11-67 LUNAR ORB	HI. 610MM B&W	-	NONE	102K	167213	267	4.7 21	-0.00	
		CAM.NAD.= 1.24S		43.17E		SWING= 172.		PHASE= 64.		EMIS.ANG.= 5.		CAM.RAD.= 1841.2 KM.		SUN AZM= 88.0			
		N. E. PART OF		LAC 79 COLOMBO,NE.M.		NECTAR											
L 5	2	44	1.24S	42.89E	26	0000	080726	8-11-67 LUNAR ORB	LO.F=80MM B&W	-	NONE	102K	1275000	267	4.8 21	-0.00	
		CAM.NAD.= 1.23S		43.17E		SWING= 173.		PHASE= 64.		EMIS.ANG.= 5.		CAM.RAD.= 1841.2 KM.		SUN AZM= 88.0			
		N. E. PART OF		LAC 79 COLOMBO,NE.M.		NECTAR											
L 5	1	45	0.97S	42.92E	26	0000	080730	8-11-67 LUNAR ORB	HI. 610MM B&W	-	NONE	102K	167213	270	4.7 21	-0.00	
		CAM.NAD.= .97S		43.19E		SWING= 175.		PHASE= 64.		EMIS.ANG.= 5.		CAM.RAD.= 1841.2 KM.		SUN AZM= 88.1			
		N. E. PART OF		LAC 79 COLOMBO,NE.M.		NECTAR											
L 5	2	45	0.96S	42.91E	26	0000	080730	8-11-67 LUNAR ORB	LO.F=80MM B&W	-	NONE	102K	1275000	270	4.8 21	-0.00	
		CAM.NAD.= .97S		43.19E		SWING= 176.		PHASE= 64.		EMIS.ANG.= 5.		CAM.RAD.= 1841.2 KM.		SUN AZM= 88.1			
		N. E. PART OF		LAC 79 COLOMBO,NE.M.		NECTAR		6		S. E. PART OF		LAC 61 TARUNTIUS,LYELL					
L 5	1	46	0.70S	42.94E	26	0000	080734	8-11-67 LUNAR ORB	HI. 610MM B&W	-	NONE	102K	167213	273	4.7 21	-0.10	
		CAM.NAD.= .71S		43.22E		SWING= 179.		PHASE= 64.		EMIS.ANG.= 5.		CAM.RAD.= 1841.2 KM.		SUN AZM= 88.2			
		N. E. PART OF		LAC 79 COLOMBO,NE.M.		NECTAR											

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MIS SION	MAG ROLL	FR. OR MAIN	PHOTO LAT.	PRIN. LUNG.	PT. #	ORB #	GET TIMES-HR	GMT M SEC (I=ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE M=N, MI K=KM.	SCALE AT PRIN. PT.	T AZ	L ANG.	T ANG.	SUN FR. VERT	SIDE, ANG. FWD. LAP K. R
L 5	2	46	U-69S	42-93E	26	***	080735	8-11-67	LUNAR ORB LO, F=80MM B&W	-	NONE	102K	1275000	273	4.8	21	-0.88	
CAM-NAD.= .715 43.22E SWING= 179. PHASE= 64. EMIS-ANG.= 5. CAM-RAD.= 1841.2 KM. SUN AZM= 88.2																		
N. E. PART OF LAC 79 COLUMBO, NE. M. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL																		
L 5	1	47	U-43S	42-96E	26	***	080739	8-11-67	LUNAR ORB HI, 610MM B&W	-	NONE	102K	167213	276	4.7	21	-0.10	
CAM-NAD.= .465 43.24E SWING= 182. PHASE= 64. EMIS-ANG.= 5. CAM-RAD.= 1841.2 KM. SUN AZM= 88.3																		
N. E. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		
L 5	2	47	U-42S	42-96E	26	***	080739	8-11-67	LUNAR ORB LO, F=80MM B&W	-	NONE	102K	1275000	277	4.8	21	-0.88	
CAM-NAD.= .455 43.24E SWING= 182. PHASE= 64. EMIS-ANG.= 5. CAM-RAD.= 1841.2 KM. SUN AZM= 88.3																		
N. E. PART OF LAC 79 COLUMBO, NE. M. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL																		
L 5	1	48	1-26S	42-98E	27	***	111835	8-11-67	LUNAR ORB HI, 610MM B&W	-	NONE	102K	167213	96	24.8	23	-0.00	
CAM-NAD.= 1-09S 41.42E SWING= 2. PHASE= 93. EMIS-ANG.= 26. CAM-RAD.= 1841.2 KM. SUN AZM= 87.9																		
N. E. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		
L 5	2	48	1-25S	42-97E	27	***	111835	8-11-67	LUNAR ORB LO, F=80MM B&W	-	NONE	102K	1275000	96	24.7	23	-0.00	
CAM-NAD.= 1-08S 41.42E SWING= 2. PHASE= 93. EMIS-ANG.= 26. CAM-RAD.= 1841.2 KM. SUN AZM= 87.9																		
N. E. PART OF LAC 79 COLUMBO, NE. M. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL																		
L 5	1	49	U-97S	43-00E	27	***	111840	8-11-67	LUNAR ORB HI, 610MM B&W	-	NONE	102K	167213	95	24.8	23	-0.13	
CAM-NAD.= .82S 41.45E SWING= 1. PHASE= 93. EMIS-ANG.= 26. CAM-RAD.= 1841.2 KM. SUN AZM= 88.0																		
N. E. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		
L 5	2	49	U-96S	43-00E	27	***	111840	8-11-67	LUNAR ORB LO, F=80MM B&W	-	NONE	102K	1275000	95	24.7	23	-0.88	
CAM-NAD.= .81S 41.45E SWING= 1. PHASE= 93. EMIS-ANG.= 26. CAM-RAD.= 1841.2 KM. SUN AZM= 88.0																		
N. E. PART OF LAC 79 COLUMBO, NE. M. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL																		
L 5	1	50	U-67S	43-03E	27	***	111845	8-11-67	LUNAR ORB HI, 610MM B&W	-	NONE	102K	167213	95	24.8	23	-0.9	
CAM-NAD.= .53S 41.47E SWING= 1. PHASE= 93. EMIS-ANG.= 26. CAM-RAD.= 1841.2 KM. SUN AZM= 88.1																		
N. E. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		
L 5	2	50	U-66S	43-02E	27	***	111845	8-11-67	LUNAR ORB LO, F=80MM B&W	-	NONE	102K	1275000	95	24.7	23	-0.88	
CAM-NAD.= .52S 41.47E SWING= 0. PHASE= 93. EMIS-ANG.= 26. CAM-RAD.= 1841.2 KM. SUN AZM= 88.1																		
N. E. PART OF LAC 79 COLUMBO, NE. M. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL																		
L 5	1	51	U-38S	43-05E	27	***	111850	8-11-67	LUNAR ORB HI, 610MM B&W	-	NONE	102K	167213	94	24.8	23	-0.13	
CAM-NAD.= .25S 41.49E SWING= 360. PHASE= 93. EMIS-ANG.= 26. CAM-RAD.= 1841.2 KM. SUN AZM= 88.3																		
N. E. PART OF LAC 79 COLUMBO, NE. M. NECTAR																		
L 5	2	51	U-37S	43-05E	27	***	111850	8-11-67	LUNAR ORB LO, F=80MM B&W	-	NONE	102K	1275000	94	24.7	23	-0.88	
CAM-NAD.= .24S 41.50E SWING= 360. PHASE= 93. EMIS-ANG.= 26. CAM-RAD.= 1841.2 KM. SUN AZM= 88.3																		
N. E. PART OF LAC 79 COLUMBO, NE. M. NECTAR 6 S. E. PART OF LAC 61 TARUNTIUS, LYELL																		
L 5	2	52	2-92N	35-56E	28	***	143052	8-11-67	LUNAR ORB LO, F=80MM B&W	-	NONE	101K	1262500	269	51.7	17	-0.00	
CAM-NAD.= 2-96N 40-00E SWING= 177. PHASE= 17. EMIS-ANG.= 56. CAM-RAD.= 1840.2 KM. SUN AZM= 89.4																		
S. E. PART OF LAC 61 TARUNTIUS, LYELL ; S. E. PART OF LAC 60 J. CAESAR, SABINE, JANSEN ; LAC 78 THEOPHILUS & LAC 79 C																		

HIS SUN	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB N	GET TIMES-HR	GHT H	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE	SCALE PRIN.	AT PT.	T I L T AZ	SUN ANG.	S I D E ANG.	FWD. LAP
L 5 1	63°	U-375	32.81E	33	...	062531	8-12-67	LUNAR ORB HI. 610MM B&W	-	NONE	39K	162295	95	29.1	23	...
CAM. RAD. = 1838.2 KM. SUN AZH = 88.3																
N. W. PART OF LAC 79 COLUMBO, NE. M. NECTAR																
L 5 2	63°	U-385	32.80E	33	...	062531	8-12-67	LUNAR ORB LO. F=80MM B&W	-	NONE	99K	1237500	95	29.0	23	...
CAM. RAD. = 1838.2 KM. SUN AZH = 88.3																
N. W. PART OF LAC 79 COLUMBO, NE. M. NECTAR																
S. W. PART OF LAC 79 COLUMBO, NE. M. NECTAR																

TOTAL PHOTOS IN THIS GROUP = 95

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTW=EKTAH 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (ON == TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

L	I	Z	MAG	FR	PHOTO	PRIN.	PT.	ORB	GLT	GMT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT		T I L T		SUN SIDE.		
														TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	M=N.MI	PT.	FR.	LAP		
#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	K=KM.	VENT	%	%		
L	1	2	26	1.62N	71.78E	30	00	0000	051116	8-19-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	228K	2850000	201	7.2	17	-..
CAM.NAD.= 2.51N 2.13E SWING= 20. PHASE= 70. EMIS.ANG.= 8. CAM.RAD.= 1967.2 KM. SUN AZH= 88.9																				
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTH I N. W. PART OF LAC 81 ANSGARIUS, 6 LAC 62 M.UNDARUM, S. CRISIUM																				
L	1	2	27	1.84N	69.77E	31	00	0000	084845	8-19-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	228K	2850000	207	5.7	17	-..
CAM.NAD.= 2.50N 70.12E SWING= 26. PHASE= 70. EMIS.ANG.= 6. CAM.RAD.= 1967.2 KM. SUN AZH= 89.0																				
S. E. PART OF LAC 62 M.UNDARUM, S. CRISIUM I S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTH I LAC 80 LANGRENUS, 6 LAC 81 AN																				
L	1	2	29	1.58N	61.42E	35	00	0000	231835	8-19-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	231K	2887500	206	7.8	16	-..
CAM.NAD.= 2.52N 61.89E SWING= 25. PHASE= 70. EMIS.ANG.= 9. CAM.RAD.= 1970.2 KM. SUN AZH= 88.9																				
SOUTHERN PART OF LAC 62 M.UNDARUM, S. CRISIUM 6 NORTHERN PART OF LAC 80 LANGRENUS, M. FERT.																				
L	1	2	31	1.54N	47.96E	39	00	0000	134659	8-20-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	243K	3037500	234	11.0	10	-..
CAM.NAD.= 3.44N 49.24E SWING= 53. PHASE= 70. EMIS.ANG.= 13. CAM.RAD.= 1982.2 KM. SUN AZH= 88.9																				
SOUTHERN PART OF LAC 61 TAHUNTIVS, LYELL I NORTHERN PART OF LAC 79 COLOMBONE 6 LAC 62 M.UNDARUM, S. CRISIUM																				
L	1	2	32	2.15N	49.95E	39	00	0000	134733	8-20-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	238K	2975000	227	9.9	12	-..
CAM.NAD.= 3.08N 50.96E SWING= 46. PHASE= 70. EMIS.ANG.= 11. CAM.RAD.= 1977.2 KM. SUN AZH= 88.9																				
S. E. PART OF LAC 61 TAHUNTIVS, LYELL I LAC 62 M.UNDARUM, S. CRISIUM 6 LAC 79 COLOMBONE																				
L	1	2	33	0.77N	56.83E	39	00	0000	134932	8-20-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	224K	2800000	189	8.0	18	-..
CAM.NAD.= 1.80N 57.00E SWING= 7. PHASE= 70. EMIS.ANG.= 9. CAM.RAD.= 1963.2 KM. SUN AZH= 88.7																				
SOUTHERN PART OF LAC 62 M.UNDARUM, S. CRISIUM 6 NORTHERN PART OF LAC 80 LANGRENUS, M. FERT.																				
L	1	2	34	0.46N	58.30E	39	00	0000	134957	8-20-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	222K	2775000	179	8.2	20	-..
CAM.NAD.= 1.52N 58.29E SWING= 358. PHASE= 70. EMIS.ANG.= 9. CAM.RAD.= 1961.2 KM. SUN AZH= 88.6																				
SOUTHERN PART OF LAC 62 M.UNDARUM, S. CRISIUM 6 NORTHERN PART OF LAC 80 LANGRENUS, M. FERT.																				
L	4	2	17	14.25N	90.44E	6	00	0000	172957	5-11-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	2739K	34237500	290	0.7	28	-..
CAM.NAD.= 13.89N 91.45E SWING= 104. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 4478.2 KM. SUN AZH= 97.5																				
LAC 64 NE. SMYTH I 1/4 MOON SPHERE I LAC 115 FURNERIVS I LAC 80 LANGRENUS, M. FERT. 6 LAC 101 TSJOLKOVSKY																				
L	4	2	38	42.63S	77.77E	9	00	0000	042846	5-13-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	2982K	37275000	98	4.8	24	-..
CAM.NAD.= 42.01S 66.45E SWING= 295. PHASE= 78. EMIS.ANG.= 13. CAM.RAD.= 4721.2 KM. SUN AZH= 64.8																				
LAC 115 FURNERIVS I 1/2 MOON SPHERE I LAC 140 SCHRODING I LAC 129 M.AUSTRALIA, LYOT 6 LAC 80 LANGRENUS, M. F																				

MIS SIGN	MAG KULL	FR, PHOTO OR	PRIN. PT. LAT.	URB LONG.	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN.	AT PT.	T ANG.	L ANG.	SUN FWD.	SIDF. LAP
"	"	MAIN	"	"	(ESTIMATED)	"	"	"	"	M=N.MI K=KM.	"	"	FR.	VERT	"	"
L 4	1	39	14.905	69.88E	9	000 050052	5-13-67	LUNAR ORB HI. 610MM R6W	- NONE	2745K	4500000	135	05 26	-0.45		
CAM. RAD. = 4484.2 KM. SUN AZH = 82.2																
LAC 80 LANGRENUS, M. FERT. ; LAC 98 PETAVIUS, H ; LAC 99 HUMBOLDT, GIBBS																
L 4	2	39	14.895	69.88E	9	000 050052	5-13-67	LUNAR ORB LO. F=80MM B&W	- NONE	2745K	34317500	134	05 26	-0.00		
CAM. RAD. = 4484.2 KM. SUN AZH = 82.2																
LAC 80 LANGRENUS, M. FERT.																
L 4	1	46	14.815	63.41E	10	000 170137	5-13-67	LUNAR ORB HI. 610MM B&W	- NONE	2743K	4496721	122	05 26	-0.39		
CAM. RAD. = 4482.2 KM. SUN AZH = 82.3																
EASTERN PART OF LAC 80 LANGRENUS, M. FERT. ; LAC 98 PETAVIUS, H ; SOUTHERN PART OF LAC 62 M. UNDAKUM, S.																
L 4	2	46	14.815	63.40E	10	000 170137	5-13-67	LUNAR ORB LO. F=80MM B&W	- NONE	2743K	34287500	122	05 26	-0.00		
CAM. RAD. = 4482.2 KM. SUN AZH = 82.3																
LAC 80 LANGRENUS, M. FERT.																
L 4	1	47	13.32N	62.36E	10	000 173242	5-13-67	LUNAR ORB HI. 610MM B&W	- NONE	2738K	4480525	257	10 25	-0.2		
CAM. RAD. = 4477.2 KM. SUN AZH = 95.9																
CENTRAL PART OF LAC 62 M. UNDAKUM, S. CRISIUM ; LAC 44 CLEOMEDES, 6 LAC 80 LANGRENUS, M. FERT.																
L 4	1	53	14.825	56.82E	11	000 050229	5-14-67	LUNAR ORB HI. 610MM B&W	- NONE	2740K	4491803	122	05 25	-0.51		
CAM. RAD. = 4479.2 KM. SUN AZH = 82.4																
WESTERN PART OF LAC 80 LANGRENUS, M. FERT. ; LAC 98 PETAVIUS, H ; S. W. PART OF LAC 62 M. UNDAKUM, S.																
L 4	2	53	14.815	56.82E	11	000 050229	5-14-67	LUNAR ORB LO. F=80MM B&W	- NONE	2740K	34250000	122	05 25	-0.56		
CAM. RAD. = 4479.2 KM. SUN AZH = 82.4																
DEGRADED NEGATIVE ; LAC 80 LANGRENUS, M. FERT. ; LAC 44 CLEOMEDES, 6 LAC 128 HIELA, MATT																
L 4	1	54	13.59N	56.76E	11	000 053333	5-14-67	LUNAR ORB HI. 610MM B&W	- NONE	2737K	4486885	259	10 26	-0.36		
CAM. RAD. = 4476.2 KM. SUN AZH = 96.2																
WESTERN PART OF LAC 62 M. UNDAKUM, S. CRISIUM ; LAC 44 CLEOMEDES, 6 LAC 128 HIELA, MATT																
L 4	1	60	13.585	48.79E	12	000 170326	5-14-67	LUNAR ORB HI. 610MM B&W	- NONE	2738K	4488525	319	07 23	-0.51		
CAM. RAD. = 4477.2 KM. SUN AZH = 83.6																
LAC 79 COLUMBUS, NE. M. NECTAR ; LAC 80 LANGRENUS, M. FERT. ; LAC 97 FRACASTORIUS, S. NECTAR ; LAC 98 PETAVIUS, H																
L 4	1	61	14.14N	49.69E	12	000 173428	5-14-67	LUNAR ORB HI. 610MM B&W	- NONE	2734K	4481967	278	10 25	-0.49		
CAM. RAD. = 4473.2 KM. SUN AZH = 96.2																
LAC 61 TARNIUS, LYELL ; LAC 62 M. UNDAKUM, S. CRISIUM ; LAC 43 MACROBIUS, PROCLUS ; LAC 44 CLEOMEDES, H.																
L 4	2	72	15.765	37.86E	14	000 170548	5-15-67	LUNAR ORB LO. F=80MM B&W	- NONE	2732K	34150000	131	10 24	-0.70		
CAM. RAD. = 4471.2 KM. SUN AZH = 82.2																
LAC 79 COLUMBUS, NE. ; >1/2 MOON SPHERE ; LAC 43 MACROBIUS, PROCLUS ; LAC 80 LANGRENUS, M. FERT. ; LAC 114 RHEITA, JANSS																
L 4	2	97	12.97N	9.65E	18	000 174328	5-17-67	LUNAR ORB LO. F=80MM B&W	- NONE	2705K	33812500	245	10 22	-0.50		
CAM. RAD. = 4444.2 KM. SUN AZH = 94.7																
LAC 59 M. VAPORUM, HYGINUS ; >1/2 MOON SPHERE ; LAC 12 PLATO, ALPI ; LAC 80 LANGRENUS, M. FERT. ; LAC 114 RHEITA, JA																



MIS SION	MAG ROLL	FR. OR MAIN	PHOTO LAT.	PRIN. LAT.	PT. LONG.	ORB #	GEI TIMES	GMT -HR M SEC (ESTIMATED)	M-DA-YR	CAMERA-SENS OR OR TYPE	FILM-EXPOSURE AND FILTER	ALT; TIDE	SCALE PRIN.	AZ PT.	T ANG.	L ANG.	SUN FWD.	SIDE, LAP 8. X
L 4	2	100	42.715	12.29E	19	***	****	044237	5-18-67	LUNAR ORB LO,F=80MM B&W	-	NONE	2978K 372250HU	96	4.8	21	-..	
CAM.RAD.= 42.25S 1.05E SWING= 295. PHASE= 81. EMIS.ANG.= 13. CAM.RAD.= 4717.2 KM. SUN AZM= 68.1																		
LAC 113 MAUROLYCUS,RAB,LEVI ; >1/2 MOON SPHERE ; LAC 140 SCHRODING ; LAC 129 M.AUSTRA ; LAC 77 PTULH & LAC 80 LANGR																		
L 4	2	1925	38.22N	53.84E	33	***	****	094709	5-25-67	LUNAR ORB LO,F=80MM B&W	-	NONE	5504K 68799999	288	7.7	16	-..	
CAM.RAD.= 33.93N 86.05E SWING= 282. PHASE= 107. EMIS.ANG.= 34. CAM.RAD.= 7243.2 KM. SUN AZM= 257.7																		
DEGRADED NEGATIVE ; LAC 27 GEMINUS,AT ; >1/2 MOON SPHERE ; LAC 80 LANGRENUS,M.FERT. & LAC 26 EURDUXUS,RURG																		
L 5	1	38	0.95S	49.14E	19	***	****	094936	8-10-67	LUNAR ORB HI, A10MM B&W	-	NONE	103K 168852	269	59.4	16	-..	
CAM.RAD.= .92S 55.52E SWING= 177. PHASE= 8. EMIS.ANG.= 66. CAM.RAD.= 1842.2 KM. SUN AZM= 88.2																		
N. E. PART OF LAC 79 COLUMBU,NE,M.NECTAR & N. W. PART OF LAC 80 LANGRENUS,M.FERT.																		
L 5	2	38	0.93S	49.10E	19	***	****	094936	8-10-67	LUNAR ORB LO,F=80MM B&W	-	NONE	103K 128750D	269	59.5	16	-..	
CAM.RAD.= .91S 55.52E SWING= 177. PHASE= 8. EMIS.ANG.= 66. CAM.RAD.= 1842.2 KM. SUN AZM= 88.2																		
N. E. PART OF LAC 79 COLUMBU,NE ; SOUTHERN PART OF LAC 61 TARGHTIUS,LYELL & LAC 62 M.UNDARUM,S.CRISIUM																		

TOTAL PHOTOS IN THIS GROUP = 25

170

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN:

TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS

(-), (+), ( ), OR ( ) = NO INFO

W = APPROXIMATELY

NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND

CAMERA-LENS AS FOLLOWS:

S.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;

HSB=HASSELBLAD;

MAUR=MAUREH;

ZP,ZB,ZS =

ZEISS LENS PLANAR, BIOGEN, SONAR; FOCAL LENGTH(MM) & MAX.F-OPENING

LC = AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)

FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS

COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT D.O

MIS SION	MAG #	FR. OR MAIN	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HR	GMT M SEC (I=ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE M=N,M K=KM.	SCALE AT PRIN. PT.	T I L T AZ FR. VERT	SUN SIDE, ANG. FR. VERT	FWD. LAP R, R
L 1	2	5	1.82N	24.00E	26	***	****	144250	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	218K	2725000	292	5.4 22	-.00
CAM.NAD.= 1.62N 84.63E SWING= 99. PHASE= 63. EMIS.ANG.= 6. CAM.RAD.= 1957.2 KM. SUN AZM= 89.1																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI																
L 1	2	6	1.75N	84.58E	26	***	****	144300	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	218K	2725000	293	4.8 22	-.88
CAM.NAD.= 1.52N 85.14E SWING= 100. PHASE= 63. EMIS.ANG.= 5. CAM.RAD.= 1957.2 KM. SUN AZM= 89.1																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI																
L 1	2	7	1.63N	85.16E	26	***	****	144310	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	217K	2712500	294	4.3 23	-.88
CAM.NAD.= 1.41N 85.65E SWING= 102. PHASE= 63. EMIS.ANG.= 5. CAM.RAD.= 1956.2 KM. SUN AZM= 89.1																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI																
L 1	2	8	1.51N	85.73E	26	***	****	144320	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	216K	2700000	296	3.8 23	-.88
CAM.NAD.= 1.30N 86.16E SWING= 103. PHASE= 63. EMIS.ANG.= 4. CAM.RAD.= 1955.2 KM. SUN AZM= 89.0																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI																
L 1	2	9	1.38N	86.31E	26	***	****	144329	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	215K	2687500	298	3.3 24	-.88
CAM.NAD.= 1.19N 86.67E SWING= 106. PHASE= 63. EMIS.ANG.= 4. CAM.RAD.= 1954.2 KM. SUN AZM= 89.0																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI																
L 1	2	10	1.26N	86.88E	26	***	****	144339	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	215K	2687500	301	2.8 25	-.88
CAM.NAD.= 1.08N 87.18E SWING= 109. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 1954.2 KM. SUN AZM= 88.9																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 N. E. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI																
L 1	2	11	1.14N	87.45E	26	***	****	144349	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	214K	2675000	305	2.3 25	-.88
CAM.NAD.= .97N 87.68E SWING= 113. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 1953.2 KM. SUN AZM= 88.9																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 1 N. E. PART OF LAC 81 ANSGARIUS, 6 S. W. PART OF LAC 64 NE, SMYTHI H																
L 1	2	12	1.01N	88.02E	26	***	****	144359	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	214K	2675000	312	1.9 26	-.88
CAM.NAD.= .86N 88.19E SWING= 119. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1953.2 KM. SUN AZM= 88.8																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 1 N. E. PART OF LAC 81 ANSGARIUS, 6 S. W. PART OF LAC 64 NE, SMYTHI H																
L 1	2	13	0.89N	88.59E	26	***	****	144409	8-18-66	LUNAR ORB LO.F=80MM B&W	- NONE	213K	2662500	322	1.4 26	-.88
CAM.NAD.= .75N 88.70E SWING= 130. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1952.2 KM. SUN AZM= 88.8																
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI 1 N. E. PART OF LAC 81 ANSGARIUS, 6 LAC 64 NE, SMYTHI HERTZ																

HIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDE
SUN ROLL	OR	LAT.	N	TIMES-HR	M SEC			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
#	#	MAIN	LONG.	(ESTIMATED)				TYPE		M=N.MI	PT.	FR.	LAP
										K=KM.		VERT	S. S
L 1	2	14°	0.77N	89.16E	26	000	144419	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	213K	2662500	340 1.1 27 -.88
CAM.NAD.= .64N 89.21E SWING= 148. PHASE= 63. EMIS.ANG.= 1. CAM.RAD.= 1952.2 KM. SUN AZM= 88.7													
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 81 ANSGARIUS, ; LAC 64 NE. SMYTHI ; LAC 82 SE. M. SMYTHI, PASTEUR													
L 1	2	15°	0.64N	89.73E	26	000	144428	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	212K	2650000	8 .9 27 -.88
CAM.NAD.= .53N 89.72E SWING= 176. PHASE= 63. EMIS.ANG.= 1. CAM.RAD.= 1951.2 KM. SUN AZM= 88.7													
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 81 ANSGARIUS, ; LAC 64 NE. SMYTHI ; LAC 82 SE. M. SMYTHI, PASTEUR													
L 1	2	16°	0.52N	90.30E	26	000	144438	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	212K	2650000	38 1.0 28 -.87
CAM.NAD.= .42N 90.22E SWING= 206. PHASE= 63. EMIS.ANG.= 1. CAM.RAD.= 1951.2 KM. SUN AZM= 88.6													
S. N. PART OF LAC 64 NE. SMYTHI ; HERTZ ; LAC 81 ANSGARIUS, ; LAC 63 NEPER, SCHUBERT, N. ; LAC 82 SE. M. SMYTHI, PASTEUR													
L 1	2	17°	0.40N	90.86E	26	000	144448	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	211K	2637500	58 1.4 28 -.88
CAM.NAD.= .31N 90.72E SWING= 226. PHASE= 63. EMIS.ANG.= 1. CAM.RAD.= 1950.2 KM. SUN AZM= 88.5													
S. N. PART OF LAC 64 NE. SMYTHI ; N. N. PART OF LAC 82 SE. M. SMYTHI ; LAC 81 ANSGARIUS, W. M. SMYTHI ; LAC 63 NEPER, SCHUBERT													
L 1	2	18°	0.27N	91.43E	26	000	144458	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	211K	2637500	70 1.8 29 -.87
CAM.NAD.= .20N 91.23E SWING= 237. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1950.2 KM. SUN AZM= 88.5													
S. N. PART OF LAC 64 NE. SMYTHI ; N. N. PART OF LAC 82 SE. M. SMYTHI ; LAC 81 ANSGARIUS, W. M. SMYTHI ; LAC 63 NEPER, SCHUBERT													
L 1	2	19°	0.15N	92.00E	26	000	144507	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	211K	2637500	77 2.2 30 -.87
CAM.NAD.= .09N 91.74E SWING= 245. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 1950.2 KM. SUN AZM= 88.4													
S. N. PART OF LAC 64 NE. SMYTHI ; HERTZ ; N. N. PART OF LAC 82 SE. M. SMYTHI ; N. E. PART OF LAC 81 ANSGARIUS, W.													
L 1	2	20°	0.03N	92.57E	26	000	144517	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	211K	2637500	82 2.7 30 -.87
CAM.NAD.= .02S 92.24E SWING= 249. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 1950.2 KM. SUN AZM= 88.3													
S. N. PART OF LAC 64 NE. SMYTHI ; HERTZ ; N. N. PART OF LAC 82 SE. M. SMYTHI ; N. E. PART OF LAC 81 ANSGARIUS, W.													
L 1	2	25°	1.23N	76.16E	28	000	215625	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	227K	2837500	191 9.8 17 -.00
CAM.NAD.= 2.49N 76.43E SWING= 9. PHASE= 70. EMIS.ANG.= 11. CAM.RAD.= 1966.2 KM. SUN AZM= 88.8													
S. N. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; N. N. PART OF LAC 81 ANSGARIUS, W. M. SMYTHI													
L 1	2	26°	1.62N	71.78E	30	000	051116	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NONE	228K	2850000	201 7.2 17 -.00
CAM.NAD.= 2.51N 72.13E SWING= 20. PHASE= 70. EMIS.ANG.= 8. CAM.RAD.= 1967.2 KM. SUN AZM= 88.9													
S. N. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; N. N. PART OF LAC 81 ANSGARIUS, ; LAC 62 M. UNDAUM, S. CRISIUM													
L 1	2	27°	1.64N	69.77E	31	000	084845	8-19-66 LUNAR ORB LO.F=80MM B&W	-	NONE	228K	2850000	207 5.7 17 -.00
CAM.NAD.= 2.50N 70.12E SWING= 26. PHASE= 70. EMIS.ANG.= 6. CAM.RAD.= 1967.2 KM. SUN AZM= 89.0													
S. E. PART OF LAC 62 M. UNDAUM, S. CRISIUM ; S. N. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 60 LANGRENU, ; LAC 81 AN													
L 2	2	196	8.94S	100.54E	97	000	045805	11-25-66 LUNAR ORB LO.F=80MM B&W	-	NONE	1519K	18987500	218 .3 20 -.00
CAM.NAD.= 8.77S 100.68E SWING= 216. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 3258.2 KM. SUN AZM= 272.8													
LAC 82 SE. M. SMYTHI ; 1/4 MOON SPHERE ; LAC 64 NE. SMYTHI ; LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 65 GUYOT KING													
L 4	2	10	41.41S	96.20E	6	000	162648	5-11-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2987K	37337500	89 4.3 25 -.90
CAM.NAD.= 41.88S 86.30E SWING= 287. PHASE= 76. EMIS.ANG.= 12. CAM.RAD.= 4726.2 KM. SUN AZM= 65.2													
LAC 116 M. AUSTRAL ; 1/2 MOON SPHERE ; LUNAR E. HEMISPHE ; LAC 140 SCHRÖDINGER ; LAC 81 ANSGARIUS, W. M.													

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE.			
SION ROLL	OR	LA1.	"	"	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	ANG. FWD.			
"	"	MAIN	LONG.	"	(ESTIMATED)			TYPE		M=N.MI	PT.	FR. LAP			
										K=KM.	VERT	R. R			
L 4	1	17	14.24N	90.44E	6	000	172957	5-11-67 LUNAR ORB HI. 610MM B&W	-	NONE	2739K	4490164	290	07 29	-0.43
CAM. RAD. = 13.89N 91.45E					SWING = 104.		PHASE = 60. EMIS. ANG. = 2.		CAM. RAD. = 4478.2 KM.		SUN AZH = 97.5				
LAC 64 NE. SMYTHII HERTZ					; LAC 46		JOLIOT MAXWELL		; LAC 63 NEPER, SCHUBERT, N. SMYTHI		LAC 45 PLUTARCH, HAH				
L 4	1	18	14.63N	90.47E	6	000	173007	5-11-67 LUNAR ORB HI. 610MM B&W	-	NONE	2740K	4491803	301	07 28	-0.90
CAM. RAD. = 14.04N 91.46E					SWING = 116.		PHASE = 60. EMIS. ANG. = 2.		CAM. RAD. = 4479.2 KM.		SUN AZH = 97.7				
LAC 64 NE. SMYTHII HERTZ					; LAC 46		JOLIOT MAXWELL		; LAC 63 NEPER, SCHUBERT, N. SMYTHI		LAC 45 PLUTARCH, HAH				
L 4	2	193	15.03N	90.51E	6	000	173017	5-11-67 LUNAR ORB LO. F=80MM B&W	-	NONE	2740K	34250000	312	08 28	-0.3
CAM. RAD. = 14.19N 91.48E					SWING = 126.		PHASE = 60. EMIS. ANG. = 2.		CAM. RAD. = 4479.2 KM.		SUN AZH = 98.0				
DEGRADED NEGATIVE ; LAC 64 NE. SMYTHII					; W1/4 MOONS SPHERE ;		LAC 81 ANSGARIUS, W.M. SMYTHI		LAC 129 M. AUSTRAL. L						
L 4	2	210	42.98N	98.82E	6	000	180334	5-11-67 LUNAR ORB LO. F=80MM B&W	-	NONE	2979K	37237500	R6	10 27	-0.00
CAM. RAD. = 42.88N 94.55E					SWING = 249.		PHASE = 67. EMIS. ANG. = 5.		CAM. RAD. = 4718.2 KM.		SUN AZH = 117.8				
LAC 29 BRUNO FABR ; W>1/2 MOON SPHERE ;					LAC 81 ANSGARIUS, ;		LAC 146 N. POLE FAR SIDE ; HANSEN, W3		580N		LAC 64 NE. SMYTHII HF				
L 4	2	230	43.72N	99.00E	6	000	180354	5-11-67 LUNAR ORB LO. F=80MM B&W	-	NONE	2983K	37287500	78	10 27	-0.78
CAM. RAD. = 43.16N 94.60E					SWING = 241.		PHASE = 67. EMIS. ANG. = 5.		CAM. RAD. = 4722.2 KM.		SUN AZH = 118.3				
LAC 29 BRUNO FABR ; W>1/2 MOON SPHERE ;					LUNAR N. HEMISPHE ;		LAC 81 ANSGARIUS, W.M. SMYTHI		LAC 6						
L 4	1	27	15.22S	82.67E	7	000	045932	5-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	2747K	4503279	175	06 26	-0.44
CAM. RAD. = 14.35S 82.59E					SWING = 0.		PHASE = 64. EMIS. ANG. = 1.		CAM. RAD. = 4484.2 KM.		SUN AZH = 81.9				
CENTRAL PART OF LAC 81 ANSGARIUS, ;					EASTERN PART OF		LAC 99 HUMBULT, GI ;		LAC 63 NEPER, SCHUBERT, N. S		LAC 115 FURNERIUS, OK				
L 4	1	280	13.34N	81.88E	7	000	053040	5-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	2740K	4491803	258	10 26	-0.15
CAM. RAD. = 13.94N 84.83E					SWING = 73.		PHASE = 59. EMIS. ANG. = 5.		CAM. RAD. = 4479.2 KM.		SUN AZH = 96.3				
CENTRAL PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI					; EASTERN PART OF		LAC 45 PLUTARCH, HAH		LAC 81 ANSGARIUS, W.M. SMYTHI						
L 4	1	343	14.71S	76.59E	8	000	170009	5-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	2746K	4501619	116	04 26	-0.43
CAM. RAD. = 14.41S 75.97E					SWING = 302.		PHASE = 64. EMIS. ANG. = 1.		CAM. RAD. = 4485.2 KM.		SUN AZH = 82.1				
DEGRADED NEGATIVE ; LAC 81 ANSGARIUS, W.M. SMYTHI					WESTERN PART OF		LAC 99 HUMBULT, GIRB		SOUTHERN PART OF		LAC 63 NEPER, SCHUB				
L 4	2	343	14.71S	76.59E	8	000	170009	5-12-67 LUNAR ORB LO. F=80MM B&W	-	NONE	2746K	34325000	116	04 26	-0.00
CAM. RAD. = 14.40S 75.97E					SWING = 301.		PHASE = 64. EMIS. ANG. = 1.		CAM. RAD. = 4485.2 KM.		SUN AZH = 82.1				
DEGRADED NEGATIVE					LAC 81 ANSGARIUS, W.M. SMYTHI										
L 4	1	353	13.63N	76.71E	8	000	173116	5-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	2740K	4491803	260	09 27	-0.35
CAM. RAD. = 13.88N 78.20E					SWING = 74.		PHASE = 61. EMIS. ANG. = 2.		CAM. RAD. = 4479.2 KM.		SUN AZH = 96.7				
DEGRADED NEGATIVE ; LAC 63 NEPER, SCHUBERT, N.					WESTERN PART OF		LAC 45 PLUTARCH, HAH		N. W. PART OF		LAC 81 ANSGARIUS, W				
L 4	1	39	14.90S	69.88E	9	000	050052	5-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2745K	4500000	135	05 26	-0.45
CAM. RAD. = 14.39S 69.36E					SWING = 320.		PHASE = 65. EMIS. ANG. = 1.		CAM. RAD. = 4484.2 KM.		SUN AZH = 82.7				
LAC 80 LANGRENIUS, ; LAC 81 ANSGARIUS, ;					LAC 98 PETAVIUS, H ;		LAC 99 HUMBULT, GIBBS		LAC 62 H. UNDARUM, S.C						
L 4	1	403	13.48N	70.20E	9	000	053159	5-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2740K	4491803	245	09 27	-0.38
CAM. RAD. = 13.40N 71.57E					SWING = 59.		PHASE = 61. EMIS. ANG. = 2.		CAM. RAD. = 4479.2 KM.		SUN AZH = 96.4				
DEGRADED NEGATIVE ; LAC 63 NEPER, SCHUBERT, N. SMYTHI ;					LAC 62 H. UNDARUM, S.C		PRISIUM		LAC 45 PLUTARCH, HAH						

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LAC 81 ANSGARIUS, W.M. SMYTH

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HIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE.
SION ROLL	OR	LAT.	#	TIMES-HR M SEC				SENSOR	AND FILTER	TUDE	PRIN.	ANG.
#	#	MAIN	LONG.	(ESTIMATED)				TYPE		M=N.HI	PT.	FR.
		#								K=KM.		VERT
												ANG.
												ANG.
												FWD.
												LAP
												9. 9

TOTAL PHOTOS IN THIS GROUP = 33

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+),( ), ORIG) = NO INFO W = APPROXIMATELY NEXT TO MAGN, S=BRACKET MOUNTED; G, CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREX; ZP,ZB,ZS = ZEISS LENS(PLANAR,RIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFIRM ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT C.O

MIS SION	MAG ROLL	PHOTO OR MAIN	PRIN.PT. LAT. LONG.	ORB N	GET TIMES-HR M SEC (I=ESTIMATED)	GMT SEC	N-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. N=N.MI K=KM.	T I L T AZ ANG.	SUN SIDE ANG. FR. LAP R, R
L 1	2	13	0.69N 88.59E	26	***	****	144409	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NNNE	213K 2662500	322	1.4 26 -.88
CAM.NAD.= .75N 88.70E SWING= 130. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1952.2 KM. SUN AZH= 88.8													
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; N. E. PART OF LAC 81 ANSGARIUS, & LAC 64 NE. SMYTHI HERTZ													
L 1	2	14	0.77N 89.16E	26	***	****	144419	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NNNE	213K 2662500	340	1.1 27 -.88
CAM.NAD.= .64N 89.21E SWING= 148. PHASE= 63. EMIS.ANG.= 1. CAM.RAD.= 1952.2 KM. SUN AZH= 88.7													
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 81 ANSGARIUS, ; LAC 64 NE. SMYTHI & LAC 82 SE.M.SMYTHI,PASTEUR													
L 1	2	15	0.64N 89.73E	26	***	****	144428	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NNNE	212K 2650000	8	.9 27 -.88
CAM.NAD.= .53N 89.72E SWING= 176. PHASE= 63. EMIS.ANG.= 1. CAM.RAD.= 1951.2 KM. SUN AZH= 88.7													
S. E. PART OF LAC 63 NEPER, SCHUBERT, N. SMYTHI ; LAC 81 ANSGARIUS, ; LAC 64 NE. SMYTHI & LAC 82 SE.M.SMYTHI,PASTEUR													
L 1	2	16	0.52N 90.30E	26	***	****	144438	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NNNE	212K 2650000	38	1.0 28 -.87
CAM.NAD.= .42N 90.22E SWING= 206. PHASE= 63. EMIS.ANG.= 1. CAM.RAD.= 1951.2 KM. SUN AZH= 88.6													
S. N. PART OF LAC 64 NE. SMYTHI HERTZ ; LAC 81 ANSGARIUS, ; LAC 63 NEPER, SCHUBERT, N & LAC 82 SE.M.SMYTHI,PAST													
L 1	2	17	0.40N 90.86E	26	***	****	144448	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NNNE	211K 2637500	58	1.4 28 -.88
CAM.NAD.= .31N 90.72E SWING= 226. PHASE= 63. EMIS.ANG.= 1. CAM.RAD.= 1950.2 KM. SUN AZH= 88.5													
S. W. PART OF LAC 64 NE. SMYTHI ; N. W. PART OF LAC 82 SE.M.SMYTH ; LAC 81 ANSGARIUS, W.M.SMYT & LAC 63 NEPER, SCHUBERT													
L 1	2	18	0.27N 91.43E	26	***	****	144458	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NNNE	211K 2637500	70	1.8 29 -.87
CAM.NAD.= .20N 91.23E SWING= 237. PHASE= 63. EMIS.ANG.= 2. CAM.RAD.= 1950.2 KM. SUN AZH= 88.5													
S. W. PART OF LAC 64 NE. SMYTHI ; N. W. PART OF LAC 82 SE.M.SMYTH ; LAC 81 ANSGARIUS, W.M.SMYT & LAC 63 NEPER, SCHUBERT													
L 1	2	19	0.15N 92.00E	26	***	****	144507	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NNNE	211K 2637500	77	2.2 30 -.87
CAM.NAD.= .09N 91.74E SWING= 245. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 1950.2 KM. SUN AZH= 88.4													
S. W. PART OF LAC 64 NE. SMYTHI HERTZ ; N. W. PART OF LAC 82 SE.M.SMYTH & N. F. PART OF LAC 81 ANSGARIUS, W.													
L 1	2	20	0.03N 92.57E	26	***	****	144517	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NNNE	211K 2637500	82	2.7 30 -.87
CAM.NAD.= .02S 92.24E SWING= 249. PHASE= 63. EMIS.ANG.= 3. CAM.RAD.= 1950.2 KM. SUN AZH= 88.3													
S. W. PART OF LAC 64 NE. SMYTHI HERTZ ; N. W. PART OF LAC 82 SE.M.SMYTH & N. E. PART OF LAC 81 ANSGARIUS, W.													
L 1	2	21	1.04S 97.54E	26	***	****	144643	8-18-66 LUNAR ORB LO.F=80MM B&W	-	NNNE	210K 2625000	94	7.1 35 -.88
CAM.NAD.= .97S 96.68E SWING= 262. PHASE= 63. EMIS.ANG.= 8. CAM.RAD.= 1949.2 KM. SUN AZH= 87.5													
NORTHERN PART OF LAC 82 SE.M.SMYTHI,PASTEUR & SOUTHERN PART OF LAC 64 NE. SMYTHI HERTZ													

MIS SION	MAG KULL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HR	GMT M	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE	SCALE PRIN.	AT PT.	T I L T AZ	SUN ANG.	SIDE, ANG.	FWD. LAP
#	#	MAIN #					(ESTIMATED)					M=N.MI K=KM.				FR. VERT		
L 1	2	22°	1.17S	98.13E	26	***	****	144653	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	210K	2625000	95	7.7	36	-.87
CAM.NAD.= 1.09S 97.20E SWING= 262. PHASE= 63. EMIS.ANG.= 9. CAM.RAD.= 1949.2 KM. SUN AZM= 87.3																		
NORTHERN PART OF LAC 82 SE.M.SMYTHI,PASTEUR & SOUTHERN PART OF LAC 64 NE.SMYTHII HERTZ																		
L 1	2	23°	1.30S	98.73E	26	***	****	144703	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	210K	2625000	95	8.2	36	-.87
CAM.NAD.= 1.26S 97.73E SWING= 263. PHASE= 63. EMIS.ANG.= 9. CAM.RAD.= 1949.2 KM. SUN AZM= 87.2																		
NORTHERN PART OF LAC 82 SE.M.SMYTHI,PASTEUR & SOUTHERN PART OF LAC 64 NE.SMYTHII HERTZ																		
L 1	2	24°	1.42S	99.32E	26	***	****	144713	8-18-66	LUNAR ORB LO.F=80MM B&W	-	NONE	210K	2625000	95	8.8	37	-.87
CAM.NAD.= 1.31S 98.26E SWING= 263. PHASE= 63. EMIS.ANG.= 10. CAM.RAD.= 1949.2 KM. SUN AZM= 87.1																		
NORTHERN PART OF LAC 82 SE.M.SMYTHI,PASTEUR & SOUTHERN PART OF LAC 64 NE.SMYTHII HERTZ																		
L 1	1	102	14.68S	104.34E	60	***	****	163624	8-23-66	LUNAR ORB HI. 610MM B&W	-	NONE	1198K	1963934	258	35.8	69	-.90
CAM.NAD.= 9.76S 150.37E SWING= 254. PHASE= 95. EMIS.ANG.= 81. CAM.RAD.= 2937.2 KM. SUN AZM= 318.3																		
EASTERN PART OF LAC 82 SE.M.SMYTHI ; LUNAR DISC FARSIUE ; LAC 83 LANGEMAK ; LAC 101 TSIOLKOVSKY & LAC 100 CURIE																		
L 1	2	102	14.68S	104.35E	60	***	****	163624	8-23-66	LUNAR ORB LO.F=80MM B&W	-	NONE	1198K	14975000	258	35.7	69	-.90
CAM.NAD.= 9.76S 150.38E SWING= 254. PHASE= 95. EMIS.ANG.= 81. CAM.RAD.= 2937.2 KM. SUN AZM= 318.3																		
LAC 82 SE.M.SMYTHI ; LUNAR DISC FARSIUE ; LAC 101 TSIOLKOVSKY ; LAC 83 LANGEMAK & LAC 117 VAN DER WAAL																		
L 2	1	196	8.84S	100.56E	97	***	****	045805	11-25-66	LUNAR ORB HI. 610MM B&W	-	NONE	1519K	2490164	236	.2	20	-.90
CAM.NAD.= 8.77S 100.68E SWING= 234. PHASE= 70. EMIS.ANG.= 0. CAM.RAD.= 3258.2 KM. SUN AZM= 272.8																		
CENTRAL PART OF LAC 82 SE.M.SMYTHI,PASTEUR ; NORTHERN PART OF LAC 100 CURIE & SOUTHERN PART OF LAC 64 NE.SMYTHII H																		
L 2	2	196	8.94S	100.54E	97	***	****	045805	11-25-66	LUNAR ORB LO.F=80MM B&W	-	NONE	1519K	18987500	218	.3	20	-.90
CAM.NAD.= 8.77S 100.68E SWING= 216. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 3258.2 KM. SUN AZM= 272.8																		
LAC 82 SE.M.SMYTHI ; 1/4 MOONS SPHERE ; LAC 64 NE.SMYTHII ; LAC 63 NEPER,SCHUBERT,N.SMYTHI & LAC 65 GUYOT KING																		
L 4	1	17	14.24N	90.44E	6	***	****	172957	5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2739K	4490164	290	.7	29	-.93
CAM.NAD.= 13.89N 91.45E SWING= 104. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 4478.2 KM. SUN AZM= 97.5																		
LAC 64 NE.SMYTHII HERTZ ; LAC 46 JOLIOT MAXWELL ; LAC 63 NEPER,SCHUBERT,N.SMYTHI & LAC 45 PLUTARCH,HAH																		
L 4	1	18	14.63N	90.47E	6	***	****	173007	5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2740K	4491803	301	.7	28	-.90
CAM.NAD.= 14.64N 91.46E SWING= 116. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 4479.2 KM. SUN AZM= 97.7																		
LAC 64 NE.SMYTHII HERTZ ; LAC 46 JOLIOT MAXWELL ; LAC 63 NEPER,SCHUBERT,N.SMYTHI & LAC 45 PLUTARCH,HAH																		
L 4	1	20°	15.42N	90.54E	6	***	****	173027	5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2741K	4493443	319	.9	28	-.90
CAM.NAD.= 14.34N 91.49E SWING= 134. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 4480.2 KM. SUN AZM= 98.2																		
LAC 64 NE.SMYTHII ; LAC 46 JOLIOT MAXWELL ; LAC 63 NEPER,SCHUBERT,N.SMYTHI ; LAC 45 PLUTARCH,H & LAC 82 SE.M.SMYTH																		
L 4	2	123°	1.13N	162.38E	22	***	****	232754	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	6151K	76887499	44	.4	00	-.90
CAM.NAD.= .00 161.26E SWING= 64. PHASE= 111. EMIS.ANG.= 2. CAM.RAD.= 7890.2 KM. SUN AZM= 271.1																		
LAC 67 SPENCER ; LAC 131 PRANDTL ; LAC 6 ; EARTH'S SPHERE & LAC 82 SE.M.SMYTHI,P																		

TOTAL PHOTOS IN THIS GROUP = 20

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO ~ = APPROXIMATELY NEXT TO MAG#, R=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: S.W.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 MSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OK == TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	P.T.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE,
SIUN	KOLL	OR	LAT.				TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
#	#	MAIN		LONG.			(ESTIMATED)			TYPE		M=MM	PT.		FR.	LAP	
												K=KM.			VERT		R. R
L 1	1	102	14.68S	104.34E	60	***	0000	163624	8-23-66	LUNAR ORB HI. 610MM B&W	-	NONE	1198K	1963934	258	35.8	69
			CAM.HAD.=	9.76S	150.37E		SWING=	254.		PHASE=	95.	EMIS.ANG.=	81.		CAM.RAD.=	2937.2	KM.
			EASTERN PART OF	LAC 82	SE.M.SMYTH					LUNAR DISC FAR SIDE						SUN AZM=	318.3
										LAC 83 LANGEHAK							& LAC 100 CURIE
L 1	2	102	14.68S	104.35E	60	***	0000	163624	8-23-66	LUNAR ORB LO.F=80MM B&W	-	NONE	1198K	14975000	258	35.7	69
			CAM.HAD.=	9.76S	150.38E		SWING=	254.		PHASE=	95.	EMIS.ANG.=	81.		CAM.RAD.=	2937.2	KM.
			LAC 82	SE.M.SMYTH						LUNAR DISC FAR SIDE						SUN AZM=	318.3
										LAC 101 TSIOLKOVSKY							& LAC 117 VAN DER WAAL
L 1	1	136	5.46S	129.33E	77	***	0000	034836	8-26-66	LUNAR ORB HI. 610MM B&W	-	NONE	1328K	2177549	359	3.5	21
			CAM.HAD.=	8.11S	129.35E		SWING=	354.		PHASE=	70.	EMIS.ANG.=	6.		CAM.RAD.=	3067.2	KM.
			EASTERN PART OF	LAC 83	LANGEHAK					WESTERN PART OF						SUN AZM=	273.7
										LAC 84 DELLINGER							& LAC 66 MENDELEEV
L 1	2	136	5.46S	129.33E	77	***	0000	034836	8-26-66	LUNAR ORB LO.F=80MM B&W	-	NONE	1328K	16600000	359	3.5	21
			CAM.HAD.=	8.11S	129.35E		SWING=	354.		PHASE=	70.	EMIS.ANG.=	6.		CAM.RAD.=	3067.2	KM.
			LAC 83	LANGEHAK						LAC 84 DELLINGER						SUN AZM=	273.7
										LAC 101 TSIOLKOVSKY							& LAC 65 GUYOT KING
L 3	1	121	24.15S	126.59E	74	***	0000	192200	2-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	1463K	2398361	182	12.7	20
			CAM.HAD.=	12.92S	127.09E		SWING=	184.		PHASE=	70.	EMIS.ANG.=	24.		CAM.RAD.=	3202.2	KM.
			EASTERN PART OF	LAC 101	TSIOLKOVSKY					S. E. PART OF						SUN AZM=	277.5
										LAC 83 LANGEHAK							& N. E. PART OF LAC 117 VAN DER WAAL
L 3	2	121	24.20S	126.68E	74	***	0000	192200	2-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1463K	18287500	181	12.8	20
			CAM.HAD.=	12.92S	127.09E		SWING=	184.		PHASE=	70.	EMIS.ANG.=	24.		CAM.RAD.=	3202.2	KM.
			LAC 101	TSIOLKOVSKY						W 1/4 MOONS SPHERE						SUN AZM=	277.4
										LAC 83 LANGEHAK							& LAC 100 CURIE
										LAC 84 DELLINGER							

TOTAL PHOTOS IN THIS GROUP = 6



REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT (AZ) & VERTICAL TO CAMERA AXIS  
(-), (+), ( ), ( ), ( ), ( ) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
H.S.B. = HASSELBLAD; MAUR= MAUREN; ZP, ZB, ZS = ZEISS LENS PLANAR, BIOGEN, SONAR; FOCAL LENGTH (MM) & MAX. F-OPENING  
100 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE	SCALE AT PRIN. PT. M=N.MI K=KM.	T I L T AZ ANG. FR. VERT	SUN SIDE, ANG. FWD. LAP X. P
L 1	1	115	2.425 145.25E	69	000555	8-25-66	LUNAR ORB HI. 610MM B&W	* -	NONE	1381K	2263934	10	6.8 19 -...
CAM. RAD. = 8.275 144.22E SWING = 4. PHASE = 70. EMIS. ANG. = 12. CAM. RAD. = 3120.2 KM. SUN AZM = 272.6													
EASTERN PART OF LAC 84 DELLINGER & S. E. PART OF LAC 66 MENDELEEV													
L 1	2	115	2.425 145.26E	69	000555	8-25-66	LUNAR ORB LO. F=80MM B&W	-	NONE	1381K	17262500	10	6.8 19 -...
CAM. RAD. = 8.275 144.23E SWING = 4. PHASE = 70. EMIS. ANG. = 12. CAM. RAD. = 3120.2 KM. SUN AZM = 272.6													
LAC 84 DELLINGER ; LAC 66 MENDELEEV ; LAC 48 W.M. MUSCOV ; LAC 85 KEELER & LAC 67 SPENCER													
L 1	2	116	1.145 152.40E	69	000941	8-25-66	LUNAR ORB LO. F=80MM B&W	-	NONE	1456K	18200000	36	9.3 11 -.90
CAM. RAD. = 7.545 148.62E SWING = 31. PHASE = 70. EMIS. ANG. = 17. CAM. RAD. = 3195.2 KM. SUN AZM = 271.8													
LAC 67 SPENCER ; LAC 84 DELLINGER ; LAC 85 KEELER ; LAC 86 DAEDALUS & LAC 66 MENDELEEV													
L 1	2	117	5.215 95.31E	71	071501	8-25-66	LUNAR ORB LO. F=80MM B&W	-	NONE	1451K	19762500	367	32.8 65 -...
CAM. RAD. = 6.075 152.84E SWING = 265. PHASE = 115. EMIS. ANG. = 90. CAM. RAD. = 3320.2 KM. SUN AZM = 284.7													
PRIN. PT. IN SPACE ; LUNAR DISC FARSIU ; LAC 101 TSIOLKOV ; LAC 84 DELLINGER & LAC 66 MENDELEEV													
L 1	1	136	5.405 129.33E	77	034836	8-26-66	LUNAR ORB HI. 610MM B&W	-	NONE	1328K	2177049	359	3.5 21 -...
CAM. RAD. = 8.115 129.35E SWING = 354. PHASE = 70. EMIS. ANG. = 6. CAM. RAD. = 3067.2 KM. SUN AZM = 273.7													
EASTERN PART OF LAC 83 LANGEMAK ; WESTERN PART OF LAC 84 DELLINGER ; LAC 65 GUYOT KING & LAC 66 MENDELEEV													
L 1	2	136	5.405 129.33E	77	034836	8-26-66	LUNAR ORB LO. F=80MM B&W	-	NONE	1328K	16600000	359	3.5 21 -...
CAM. RAD. = 8.115 129.35E SWING = 354. PHASE = 70. EMIS. ANG. = 6. CAM. RAD. = 3067.2 KM. SUN AZM = 273.7													
LAC 83 LANGEMAK ; LAC 84 DELLINGER ; LAC 101 TSIOLKOV ; LAC 102 GAGARIN, E. TSIOLKOVSKY & LAC 65 GUYOT KING													
L 2	2	75	21.215 157.99E	64	101218	11-20-66	LUNAR ORB LO. F=80MM B&W	-	NONE	1469K	18362500	181	12.9 19 -...
CAM. RAD. = 9.745 158.42E SWING = 183. PHASE = 70. EMIS. ANG. = 24. CAM. RAD. = 3208.2 KM. SUN AZM = 277.5													
LAC 103 PARACELSU ; W 1/2 MOON SPHERE ; LAC 85 KEELER ; LAC 84 DELLINGER & LAC 86 DAEDALUS													
L 3	2	121	24.235 126.68E	74	192200	2-19-67	LUNAR ORB LO. F=80MM B&W	-	NONE	1463K	18287500	181	12.8 20 -...
CAM. RAD. = 12.925 127.09E SWING = 184. PHASE = 70. EMIS. ANG. = 24. CAM. RAD. = 3202.2 KM. SUN AZM = 277.4													
LAC 101 TSIOLKOV ; W 1/4 MOON SPHERE ; LAC 83 LANGEMAK ; LAC 84 DELLINGER & LAC 100 CURIE													

TOTAL PHOTOS IN THIS GROUP = 8

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO \* = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURENT; ZP,ZB,ZS = ZEISS LENSIPLANAR,BIOGEN,SONAR; FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	OR,PHOTO OR	PRIN.PT. LAT.	ORB #	GET TIMES-HR	GMT H SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TIDE	SCALE AT PRIN.	T I L T AZ	SUN SIDE, ANG.	FWD. FR.	LAP VERT	R. R
L 1	2	115	2.925 145.26E	69 ***	000555	8-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	1381K 17262500	10	6.8 19	-..				
CAM-RAO.= 8.275 144.23E SWING= 4. PHASE= 70. EMIS.ANG.= 12. CAM-RAO.= 3120.2 KM. SUN AZH=272.6																
LAC 84 DELLINGER ; LAC 66 MENDELEEV ; LAC 48 W.M.MOSCOV ; LAC 85 KEELER & LAC 67 SPENCER																
L 1	2	116	1.145 153.40E	69 ***	000941	8-25-66	LUNAR ORB LO.F=80MM B&W	- NONE	1456K 18200000	36	9.3 11	-..				
CAM-RAO.= 7.545 140.62E SWING= 31. PHASE= 70. EMIS.ANG.= 17. CAM-RAO.= 3195.2 KM. SUN AZH=271.8																
LAC 67 SPENCER ; LAC 84 DELLINGER ; LAC 85 KEELER ; LAC 86 DAEDALUS & LAC 66 MENDELEEV																
L 2	2	33	16.395 174.07E	55 ***	025426	11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	1455K 18187500	205	.6 20	-..				
CAM-RAO.= 9.925 174.29E SWING= 202. PHASE= 70. EMIS.ANG.= 1. CAM-RAO.= 3194.2 KM. SUN AZH=273.6																
LAC 86 DAEDALUS ; W1/4 MOON SPHERE ; LAC 67 SPENCER ; LAC 69 ENGLEHARDT & LAC 87 KOROLEV.DOPPL																
L 2	2	34	4.59N 173.51E	56 ***	062254	11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	1453K 18162500	4	16.7 19	-..				
CAM-RAO.= 9.945 172.30E SWING= 355. PHASE= 70. EMIS.ANG.= 31. CAM-RAO.= 3192.2 KM. SUN AZH=268.1																
LAC 68 SHARONOV ; W>1/2 MOON SPHERE ; LAC 85 KEELER ; LAC 87 KOROLEV.DOPPLER & LAC 67 SPENCER																
L 2	1	75	21.10S 158.01E	64 ***	101218	11-20-66	LUNAR ORB HI. 610MM B&W	- NONE	1469K 2408197	181	12.8 19	-..				
CAM-RAO.= 9.745 158.42E SWING= 183. PHASE= 70. EMIS.ANG.= 24. CAM-RAO.= 3208.2 KM. SUN AZH=277.4																
WESTERN PART OF LAC 103 PARACELUS & S. W. PART OF LAC 85 KEELER																
L 2	2	75	21.21S 157.99E	64 ***	101218	11-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	1469K 18362500	181	12.9 19	-..				
CAM-RAO.= 9.745 158.42E SWING= 183. PHASE= 70. EMIS.ANG.= 24. CAM-RAO.= 3208.2 KM. SUN AZH=277.5																
LAC 103 PARACELUS ; W>1/2 MOON SPHERE ; LAC 85 KEELER ; LAC 84 DELLINGER & LAC 86 DAEDALUS																

TOTAL PHOTOS IN THIS GROUP = 6

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, \$ = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EK1=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR, B10GEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (00 = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	PR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	TILT	SUN SIDE
SIGN	ROLL	OR	LAT.	"	TIMES-HR	M SEC		SENSOR	AND FILTER	ITUDE	PRIM.	AZ	ANG. ANG. FWD.
"	"	MAIN	LONG.	"	(ESTIMATED)			TYPE		M=N,M	PT.	FR.	LAP
										K=KM.		VERT	%
L 1	2	30	10.275	162.70N	37	00.0000	073501	8-20-66 LUNAR ORB	LO.F=80MM B&W	-	NONE	1299K 16237500	240 2.3 24 -..
CAM.NAD.= 9.415 161.18W SWING= 235. PHASE= 70. EMIS.ANG.= 4.													
LAC 87 KOROLEV,DU ; LAC 105 MOHUKOVIC ; LAC 106 MARIOTTE ; LAC 86 DAEDALUS													
L 1	2	36	8.65S	162.10W	39	00.0000	145214	8-20-66 LUNAR ORB	LO.F=80MM B&W	-	NONE	1344K 16800000	20 .5 20 -.90
CAM.NAD.= 8.99S 162.23W SWING= 15. PHASE= 70. EMIS.ANG.= 1.													
LAC 87 KOROLEV,DU ; LAC 104 AITKEN,OR ; LAC 105 MOHUKOVIC ; LAC 106 MARIOTTE													
L 1	2	37	7.98S	157.76W	39	00.0000	145410	8-20-66 LUNAR ORB	LO.F=80MM B&W	-	NONE	1381K 17262500	72 2.7 15 -.90
CAM.NAD.= 8.63S 159.81W SWING= 68. PHASE= 70. EMIS.ANG.= 5.													
LAC 87 KOROLEV,DU ; LAC 86 DAEDALUS ; LAC 104 AITKEN,OR ; LAC 68 SHARONOV													
L 1	2	38	7.90S	157.26W	39	00.0000	145423	8-20-66 LUNAR ORB	LO.F=80MM B&W	-	NONE	1385K 17312500	73 3.0 15 -.90
CAM.NAD.= 8.59S 159.54W SWING= 68. PHASE= 70. EMIS.ANG.= 5.													
LAC 87 KOROLEV,DU ; LAC 86 DAEDALUS ; LAC 68 SHARONOV ; LAC 104 AITKEN,ORLOV													
L 1	2	116	1.14S	153.40E	69	00.0000	000941	8-25-66 LUNAR ORB	LO.F=80MM B&W	-	NONE	1456K 18200000	34 9.3 11 -.90
CAM.NAD.= 7.54S 148.62E SWING= 31. PHASE= 70. EMIS.ANG.= 17.													
LAC 67 SPENCER ; LAC 84 DELLINGER ; LAC 85 KEELER ; LAC 86 DAEDALUS													
L 2	1	33	10.29S	174.09E	55	00.0000	025426	11-19-66 LUNAR ORB	HI. 610MM B&W	-	NONE	1455K 2385246	207 .5 20 -..
CAM.NAD.= 9.93S 174.29E SWING= 204. PHASE= 70. EMIS.ANG.= 1.													
WESTERN PART OF LAC 86 DAEDALUS & N. W. PART OF LAC 104 AITKEN,ORLOV													
L 2	2	33	10.39S	174.07E	55	00.0000	025426	11-19-66 LUNAR ORB	LO.F=80MM B&W	-	NONE	1455K 18187500	205 .6 20 -..
CAM.NAD.= 9.92S 174.29E SWING= 202. PHASE= 70. EMIS.ANG.= 1.													
LAC 86 DAEDALUS ; 1/4 MOONS SPHERE ; LAC 67 SPENCER ; LAC 69 ENGLEHARDT													
L 2	1	34	4.71N	173.55E	56	00.0000	062254	11-19-66 LUNAR ORB	HI. 610MM B&W	-	NONE	1453K 2381967	4 16.3 19 -..
CAM.NAD.= 9.94S 172.29E SWING= 355. PHASE= 70. EMIS.ANG.= 31.													
WESTERN PART OF LAC 68 SHARONOV ; S. W. PART OF LAC 50 HORSE & N. W. PART OF LAC 86 DAEDALUS													
L 2	2	34	4.59N	173.51E	56	00.0000	062254	11-19-66 LUNAR ORB	LO.F=80MM B&W	-	NONE	1453K 18162500	4 16.2 19 -..
CAM.NAD.= 9.94S 172.30E SWING= 355. PHASE= 70. EMIS.ANG.= 31.													
LAC 68 SHARONOV ; 1/2 MOON SPHERE ; LAC 85 KEELER ; LAC 87 KOROLEV,DUPPLER													

B6

LAC 86 DAEDALUS

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HIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GLT	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDE,
SION ROLL	OR	LAT.	"	TIMES-HR	M	SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
"	"	MAIN	LONG.	(ESTIMATED)				TYPE		M=N.MI	PT.	FR.	LAP
										K=KM.		VERT	R. R
L 2 2	75	21.21S	157.99E	64	00	0000	101218 11-20-64	LUNAR ORB LO.F=80MM 86W	-	NONE	1469K	18362500	181 12.9 19 -.
		CAM-RAU==	9.74S	156.42E		SWING= 183.	PHASE= 70.	EMIS-ANG.= 24.					
		LAC 103	PARACELSU	1		1/2 MOON SPHERE	LAC 85	KEELEH					
								LAC 84					DELLINGER
													6 LAC 86 DAEDALUS

TOTAL PHOTOS IN THIS GROUP = 10

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 IFNS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER & AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	TILT	SUN	SIDE,	
STION	ROLL	OR	LAT.	#	TIMES-HR	M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
"	"	MAIN	LUNG.	(#=ESTIMATED)						TYPE		M=N.MI	PT.	FR.	LAP			
												K=KM.			VERT			
L 1	2	28	10.235	153.78W	33	***	170521	8-19-66	LUNAR	ORB LO.F=80MM B&W	- NONE	1304K	16300000	225	1.6	22	-..	
			CAM.NAD.=	9.395	152.92W	SWING=	221.	PHASE=	70.	EMIS.ANG.=	3.	CAM.RAD.=	3043.2	KM.	SUN AZM=	275.8		
			LAC 87 KOROLEV,DU	:	LAC 69 ENGLEHARDT	:	LAC 70 N.W.HERTZS	:	LAC 88 S.W.HERTZSPRUNG,PASCHEN									& LAC 105 MOHOROVIIC
L 1	1	30	10.275	162.71W	37	***	073501	8-20-66	LUNAR	ORB HI. 610MM B&W	- NONE	1299K	2129508	240	2.3	24	-..	
			CAM.NAD.=	9.415	161.18W	SWING=	235.	PHASE=	70.	EMIS.ANG.=	4.	CAM.RAD.=	3038.2	KM.	SUN AZM=	276.2		
			WESTERN PART OF	LAC 87 KOROLEV,DOPPLER														& N. W. PART OF LAC 105 MOHOROVIIC
L 1	2	30	10.275	162.70W	37	***	073501	8-20-66	LUNAR	ORB LO.F=80MM B&W	- NONE	1299K	16237500	240	2.3	24	-..	
			CAM.NAD.=	9.415	161.18W	SWING=	235.	PHASE=	70.	EMIS.ANG.=	4.	CAM.RAD.=	3038.2	KM.	SUN AZM=	276.2		
			LAC 87 KOROLEV,DU	:	LAC 105 MOHOROVIIC	:	LAC 106 MARIOTTE	:	LAC 86 DAEDALUS									& LAC 88 S.W.HERTZSPRU
L 1	2	35	8.725	162.66W	39	***	145201	8-20-66	LUNAR	ORB LO.F=80MM B&W	- NONE	1339K	16737500	343	.4	20	-..	
			CAM.NAD.=	9.035	162.51W	SWING=	338.	PHASE=	70.	EMIS.ANG.=	1.	CAM.RAD.=	3078.2	KM.	SUN AZM=	274.8		
			LAC 87 KOROLEV,DU	:	LAC 70 N.W.HERTZS	:	LAC 88 S.W.HERTZS	:	LAC 106 MARIOTTE									& LAC 105 MOHOROVIIC
L 1	1	36	8.655	162.11W	39	***	145214	8-20-66	LUNAR	ORB HI. 610MM B&W	- NONE	1344K	2203279	19	.5	20	-.90	
			CAM.NAD.=	8.995	162.23W	SWING=	14.	PHASE=	70.	EMIS.ANG.=	1.	CAM.RAD.=	3083.2	KM.	SUN AZM=	274.7		
			WESTERN PART OF	LAC 87 KOROLEV,DOPPLER														& N. W. PART OF LAC 105 MOHOROVIIC
L 1	2	36	8.655	162.10W	39	***	145214	8-20-66	LUNAR	ORB LO.F=80MM B&W	- NONE	1344K	16800000	20	.5	20	-.90	
			CAM.NAD.=	8.995	162.23W	SWING=	15.	PHASE=	70.	EMIS.ANG.=	1.	CAM.RAD.=	3083.2	KM.	SUN AZM=	274.7		
			LAC 87 KOROLEV,DU	:	LAC 104 AITKEN,OR	:	LAC 105 MOHOROVIIC	:	LAC 106 MARIOTTE									& LAC 86 DAEDALUS
L 1	2	37	7.985	157.76W	39	***	145410	8-20-66	LUNAR	ORB LO.F=80MM B&W	- NONE	1381K	17262500	72	2.7	15	-.90	
			CAM.NAD.=	8.635	159.81W	SWING=	68.	PHASE=	70.	EMIS.ANG.=	5.	CAM.RAD.=	3120.2	KM.	SUN AZM=	273.8		
			LAC 87 KOROLEV,DU	:	LAC 86 DAEDALUS	:	LAC 104 AITKEN,OR	:	LAC 68 SHARONOV									& LAC 69 ENGLEHARDT
L 1	1	38	7.935	157.27W	39	***	145423	8-20-66	LUNAR	ORB HI. 610MM B&W	- NONE	1385K	2270492	73	2.9	15	-.90	
			CAM.NAD.=	8.595	159.54W	SWING=	68.	PHASE=	70.	EMIS.ANG.=	5.	CAM.RAD.=	3124.2	KM.	SUN AZM=	273.7		
			EASTERN PART OF	LAC 87 KOROLEV,DOPPLER														& S. E. PART OF LAC 69 ENGLEHARDT
L 1	2	38	7.935	157.26W	39	***	145423	8-20-66	LUNAR	ORB LO.F=80MM B&W	- NONE	1385K	17312500	73	3.0	15	-.90	
			CAM.NAD.=	8.595	159.54W	SWING=	68.	PHASE=	70.	EMIS.ANG.=	5.	CAM.RAD.=	3124.2	KM.	SUN AZM=	273.7		
			LAC 87 KOROLEV,DU	:	LAC 86 DAEDALUS	:	LAC 68 SHARONOV	:	LAC 104 AITKEN,ORLOV									& LAC 105 MOHOROVIIC

MIS SION	MAG ROLL	PR, PHOTO UN	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE K*KM	SCALE AT PRIN. PT.	TILT AZ	SUN SIDE ANG. ANG. FWD. FR. LAP VERT 8.8
L 1	2	39	6.49S 149.05W	39	...	....	145801 8-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	1451K 18137500	77	7.3 7	-.90
CAM-HAD.= 7.89S 155.17W SWING= 73. PHASE= 70. EMIS.ANG.= 14. CAM-RAD.= 3190.2 KM. SUN AZM=272.3													
LAC 88 S.W.HERTZS ; LAC 87 KOROLEV, DO ; LAC 69 ENGLEHARDT ; LAC 70 N.W.HERTZSPRUNG, ARTEM & LAC 105 MOHOROVICIC													
L 1	2	40	6.44S 148.73W	39	...	....	145810 8-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	1454K 18175000	77	7.5 6	-.90
CAM-HAD.= 7.86S 155.00W SWING= 73. PHASE= 70. EMIS.ANG.= 14. CAM-RAD.= 3193.2 KM. SUN AZM=272.2													
LAC 88 S.W.HERTZS ; LAC 87 KOROLEV, DO ; LAC 69 ENGLEHARDT ; LAC 70 N.W.HERTZSPRUNG, ARTEM & LAC 105 MOHOROVICIC													
L 2	2	33	10.39S 174.07E	55	...	....	025426 11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	1455K 18187500	205	16.20	-.00
CAM-HAD.= 9.92S 174.29E SWING= 202. PHASE= 70. EMIS.ANG.= 1. CAM-RAD.= 3194.2 KM. SUN AZM=273.6													
LAC 86 DAEDALUS ; W1/4 MOONS SPHERE ; LAC 67 SPENCER ; LAC 69 ENGLEHARDT & LAC 87 KOROLEV, DOPPL													
L 2	2	34	9.09N 173.51E	56	...	....	062254 11-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	1453K 18162500	4	16.2 19	-.00
CAM-HAD.= 9.94S 172.30E SWING= 355. PHASE= 70. EMIS.ANG.= 31. CAM-RAD.= 3192.2 KM. SUN AZM=268.1													
LAC 68 SHARUNOV ; W1/2 MOON SPHERE ; LAC 85 KEELER ; LAC 87 KOROLEV, DOPPLER & LAC 67 SPENCER													
L 5	2	32	24.94N 138.09W	13	...	....	155741 8-09-67	LUNAR ORB LO.F=80MM B&W	- NONE	1377K 17462500	281	21.3 1	-.00
CAM-HAD.= 22.60N 116.73W SWING= 90. PHASE= 130. EMIS.ANG.= 41. CAM-RAD.= 3136.2 KM. SUN AZM=271.2													
LAC 52 JOULE LUNA ; W1/4 MOONS SPHERE ; LUNAR W. HEMISPHE ; LAC 88 S.W.HERTZSPRUNG, PASCHEN & LAC 34 FOWLER													

TOTAL PHOTOS IN THIS GROUP = 14

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+), ( ), OR (G) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE.	
SIUN	NULL	OR	LAT.	#	TIMES-HR	M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	MAIN	LONG.	(=ESTIMATED)						TYPE		M=N.MI	PT.	FR.	LAP			
												K=KM.		VERT				
L 1	2	28	10.23S	153.78W	33	00	0000	170521	8-19-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1304K	16300000	225	1.6 22	-..
			CAM-NAD.=	9.39S	152.92W		SWING=	221.		PHASE=	70.	EMIS.ANG.=	3.	CAM-RAD.=	3043.2 KM.		SUN AZM=275.8	
			LAC 87 KURULEV,DU	:	LAC 69 ENGLEHARDT	:	LAC 70 N.W.HERTZS	:	LAC 88 S.W.HERTZSPRUNG,PASCHEN								LAC 105 MOHOROVICIC	
L 1	2	30	10.27S	162.70W	37	00	0000	073501	8-20-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1299K	16237500	240	2.3 24	-..
			CAM-NAD.=	9.41S	161.18W		SWING=	235.		PHASE=	70.	EMIS.ANG.=	4.	CAM-RAD.=	3038.2 KM.		SUN AZM=276.2	
			LAC 87 KURULEV,DU	:	LAC 105 MOHOROVICIC	:	LAC 106 MARIOTTE	:	LAC 86 DAEDALUS								LAC 88 S.W.HERTZSPRU	
L 1	2	35	8.72S	162.60W	39	00	0000	145201	8-20-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1339K	16737500	343	.4 20	-..
			CAM-NAD.=	9.03S	162.51W		SWING=	338.		PHASE=	70.	EMIS.ANG.=	1.	CAM-RAD.=	3078.2 KM.		SUN AZM=274.8	
			LAC 87 KURULEV,DU	:	LAC 70 N.W.HERTZS	:	LAC 88 S.W.HERTZS	:	LAC 106 MARIOTTE								LAC 105 MOHOROVICIC	
L 1	2	36	8.65S	162.10W	39	00	0000	145214	8-20-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1344K	16800000	20	.5 20	-.90
			CAM-NAD.=	8.99S	162.23W		SWING=	15.		PHASE=	70.	EMIS.ANG.=	1.	CAM-RAD.=	3083.2 KM.		SUN AZM=274.7	
			LAC 87 KURULEV,DU	:	LAC 104 AITKEN,OR	:	LAC 105 MOHOROVICIC	:	LAC 106 MARIOTTE								LAC 86 DAEDALUS	
L 1	2	39	6.49S	149.05W	39	00	0000	145801	8-20-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1451K	18137500	77	7.3 7	-.90
			CAM-NAD.=	7.89S	155.17W		SWING=	73.		PHASE=	70.	EMIS.ANG.=	14.	CAM-RAD.=	3190.2 KM.		SUN AZM=272.3	
			LAC 88 S.W.HERTZS	:	LAC 87 KURULEV,DU	:	LAC 69 ENGLEHARDT	:	LAC 70 N.W.HERTZSPRUNG,ARTEM								LAC 105 MOHOROVICIC	
L 1	2	40	6.44S	148.73W	39	00	0000	145810	8-20-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1454K	18175000	77	7.5 6	-.90
			CAM-NAD.=	7.86S	155.00W		SWING=	73.		PHASE=	70.	EMIS.ANG.=	14.	CAM-RAD.=	3193.2 KM.		SUN AZM=272.2	
			LAC 88 S.W.HERTZS	:	LAC 87 KURULEV,DU	:	LAC 69 ENGLEHARDT	:	LAC 70 N.W.HERTZSPRUNG,ARTEM								LAC 105 MOHOROVICIC	
L 5	1	28	26.39N	133.19W	8	00	0000	145230	8-08-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5015K	8221311	281	8.7 8	-..
			CAM-NAD.=	24.16N	103.16W		SWING=	90.		PHASE=	118.	EMIS.ANG.=	36.	CAM-RAD.=	6754.2 KM.		SUN AZM=267.7	
			LAC 52 JOULE E.MA	:	W1/4 MOONS SPHERE	:	LAC 19 CARNOT ROA	:	LAC 20 COULOMB								LAC 89 S.E.HERTZSPRU	
L 5	2	32	24.94N	138.09W	13	00	0000	155741	8-09-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	1397K	17462500	281	21.3 1	-..
			CAM-NAD.=	22.60N	116.73W		SWING=	90.		PHASE=	130.	EMIS.ANG.=	41.	CAM-RAD.=	3136.2 KM.		SUN AZM=271.2	
			LAC 52 JOULE E.MA	:	W1/4 MOONS SPHERE	:	LUNAR N. HEMISPHE	:	LAC 88 S.W.HERTZSPRUNG,PASCHEN								LAC 34 FOWLER	

TOTAL PHOTOS IN THIS GROUP = 8

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+), ( ), OR(U) = NO INFO \* = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUK= MAUKER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG NOLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR M SEC (=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=N.MI PT. K=KM.	T I L T AZ ANG. ANG. FWD. FR. LAP VERT X. X	SUN SIDE, ANG. ANG. FWD. FR. LAP VERT X. X			
L 5	1	24° 26.54N	120.17W	5	***	135051	8-07-67	LUNAR ORB HI. 610MM B&W	-	NONE 5009K	8211475	281	6.9	8	-.**
		CAM-NAO = 24.01N	89.35W			SWING = 90.	PHASE = 119.	EMIS-ANG. = 37.	CAM-RAD =	6748.2 KM.			SUN AZM = 267.8		
		LAC 53 UHM FERMAN					1/4 MOONS SPHERE	LAC 135 PINGRE N. HAUSEN	LAC 20 COULOMB			6	LAC 89 S.E.HERTZS		
L 5	1	28° 26.39N	133.19W	8	***	145230	8-08-67	LUNAR ORB HI. 610MM B&W	-	NONE 5015K	8221311	281	8.7	8	-.**
		CAM-NAO = 24.16N	103.16W			SWING = 90.	PHASE = 118.	EMIS-ANG. = 36.	CAM-RAD =	6754.2 KM.			SUN AZM = 267.7		
		LAC 52 JOULE E. NA					1/4 MOONS SPHERE	LAC 19 CARNOT ROW	LAC 20 COULOMB			6	LAC 89 S.E.HERTZSPRU		

TOTAL PHOTOS IN THIS GROUP = 2

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREN; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR == TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	PR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE.
SUN	KULL	OR	LAT.	N	TIMES-HR	M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
#	#	MAIN	LONG.	(I=ESTIMATED)						TYPE		M=N.MI	PT.	FR.	FR.	LAP	
												K=KM.		VERT		R. R	
L 4	2	183	43.53N	71.02W	32	***	****	183607	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2474K	35925000	79	2.8 20	-.90
CAM.NAD.= 42.84N 77.39W SWING= 242. PHASE= 77. EMIS.ANG.= 8. CAM.RAD.= 4613.2 KM. SUN AZH=108.9																	
LAC 22 SEGERARD,BUNSEN,HARDING ; W>1/2 MOON SPHERE ; LAC 90 LOWELL & LAC 1 N.POLE NEARSI																	
L 4	1	187	14.77S	89.06W	33	***	****	053334	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	2723K	4463934	145	.5 14	-.43
CAM.NAD.= 14.36S 89.48W SWING= 330. PHASE= 77. EMIS.ANG.= 1. CAM.RAD.= 4462.2 KM. SUN AZH= 85.4																	
LAC 73 RICCIOLI,NE-ORIENTAL ; LAC 90 LOWELL ; LAC 108 H.ORIENTISW 1/3 G) & LAC 91 EICHSTADT,SE																	
L 4	1	188	13.38N	89.22W	33	***	****	060409	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	2675K	4385246	255	1.3 15	-.27
CAM.NAD.= 13.92N 87.19W SWING= 69. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4414.2 KM. SUN AZH= 92.7																	
LAC 55 VASCOUEGAN ; LAC 72 ELVEY NOBEL ; LAC 37 STRUVE,DAL ; LAC 54 BELB LAUE & LAC 73 RICCIOLI,N2.0																	
L 4	2	193	63.68S	85.98W	34	***	****	162428	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3519K	43987500	70	4.8 9	-.00
CAM.NAD.= 68.87S 107.44W SWING= 232. PHASE= 95. EMIS.ANG.= 15. CAM.RAD.= 5258.2 KM. SUN AZH= 68.6																	
LAC 135 PINGRE N.HAUSEN ; W>1/2 MOON SPHERE ; LAC 139 HELMHOLZ. ; LAC 90 LOWELL ; LAC 74 GRIMA & LAC 127 HOMM																	
L 4	2	194	42.97S	86.51W	34	***	****	170147	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3803K	37537500	100	5.3 16	-.00
CAM.NAD.= 42.01S 99.09W SWING= 297. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 4742.2 KM. SUN AZH= 73.3																	
DEGRADED NEGATIVE ; LAC 123 STEKLOV ; W>1/2 MOON SPHERE ; LAC 134 ROLITZMANN & LAC 90 LOWELL																	
L 4	1	195	14.71S	94.60W	34	***	****	173356	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	2721K	4460656	109	1.0 15	-.48
CAM.NAD.= 14.40S 96.11W SWING= 294. PHASE= 78. EMIS.ANG.= 3. CAM.RAD.= 4460.2 KM. SUN AZH= 85.2																	
EASTERN PART OF LAC 90 LOWELL ; LAC 108 H.ORIENTIS & LAC 91 EICHSTADT,SE-ORIENTAL																	
L 4	1	196	12.86N	94.86W	34	***	****	180431	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	2475K	4385246	274	.9 15	-.25
CAM.NAD.= 13.88N 93.82W SWING= 38. PHASE= 73. EMIS.ANG.= 2. CAM.RAD.= 4414.2 KM. SUN AZH= 92.7																	
EASTERN PART OF LAC 72 ELVEY NOBEL ; EASTERN PART OF LAC 54 BELB LAUE ; LAC 90 LOWELL & LAC 37 STRUVE,DALTON																	

TOTAL PHOTOS IN THIS GROUP = 7

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), ( ), ( ), OR ( ) = NO INFO W = APPROXIMATELY NEXT TO MAG. B=BACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LT. EKTAR EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; 2P, ZH, ZS = ZEISS LENS, PLANAR, BIOGEN, SONAR; FOCAL LENGTH(MM) & MAX. F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR == TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	TILT	SUN	SINF.	
SIGN	ROLL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
#	#	MAIN	LONG.	(ESTIMATED)				TYPE		M=N.MI	PT.	FR.	VERT	LA	
										K=KM.				R, R	
L 4	1	167	42.03S	60.70W	30	000	170012	5-23-67	LUNAR ORB HI. 610MM B&W	-	NONE	3009K	4932787	95	5.0 17 -0.00
CAM. RAD.= 41.825 72.48W SWING= 292. PHASE= 86. EMIS. ANG.= 14. CAM. RAD.= 4748.2 KM. SUN AZH= 72.6															
LAC 110 SCHICKARD; LAC 109 PIAZZI, V.; LAC 124 PHOCLIDE; LAC 125 SCHILLER, SEGNER & LAC 91 EICHSTADT, SE.															
L 4	1	168	14.45S	68.18W	3J	000	173229	5-23-67	LUNAR ORB HI. 610MM B&W	-	NONE	2722K	4462795	103	0.9 17 -0.47
CAM. RAD.= 14.145 69.56W SWING= 288. PHASE= 76. EMIS. ANG.= 2. CAM. RAD.= 4461.2 KM. SUN AZH= 84.9															
LAC 74 GRIMALDI, BILLY; LAC 73 RICCIOLI, NE-ORIENTAL; LAC 91 EICHSTADT, SE-ORIENTAL & LAC 92 BYRGIUS, DAW															
L 4	1	172	42.94S	67.94W	31	000	050029	5-24-67	LUNAR ORB HI. 610MM B&W	-	NONE	3011K	4936066	100	4.8 16 -0.00
CAM. RAD.= 41.98S 79.20W SWING= 297. PHASE= 86. EMIS. ANG.= 13. CAM. RAD.= 4750.2 KM. SUN AZH= 73.1															
LAC 109 PIAZZI, V.; LAC 110 SCHICKARD; LAC 124 PHOCLIDE; LAC 125 SCHILLER, SEGNER & LAC 91 EICHSTADT, SE.															
L 4	1	173	14.77S	75.41W	31	000	053243	5-24-67	LUNAR ORB HI. 610MM B&W	-	NONE	2724K	4465574	116	0.6 15 -0.48
CAM. RAD.= 14.37S 76.23W SWING= 301. PHASE= 76. EMIS. ANG.= 1. CAM. RAD.= 4463.2 KM. SUN AZH= 85.1															
EASTERN PART OF LAC 73 RICCIOLI, NE-ORIENTAL; EASTERN PART OF LAC 91 EICHSTADT, SE-ORIENTAL & LAC 55 VASCOFGAM & LAC 92 BY															
L 4	1	180	46.63S	75.22W	32	000	170054	5-24-67	LUNAR ORB HI. 610MM B&W	-	NONE	3009K	4932787	95	4.6 16 -0.00
CAM. RAD.= 42.00S 85.86W SWING= 283. PHASE= 87. EMIS. ANG.= 13. CAM. RAD.= 4748.2 KM. SUN AZH= 74.6															
CENTRAL PART OF LAC 109 PIAZZI, V.; CENTRAL PART OF LAC 124 PHOCLIDE; LAC 91 EICHSTADT, SE-ORIENTAL & LAC 110 SCHICKARD, LA															
L 4	1	181	13.09S	82.18W	32	000	173307	5-24-67	LUNAR ORB HI. 610MM B&W	-	NONE	2724K	4465574	76	0.9 15 -0.49
CAM. RAD.= 14.40S 82.06W SWING= 212. PHASE= 76. EMIS. ANG.= 2. CAM. RAD.= 4463.2 KM. SUN AZH= 85.7															
CENTRAL PART OF LAC 73 RICCIOLI, NE-ORIENTAL; CENTRAL PART OF LAC 91 EICHSTADT, SE-ORIENTAL & S. W. PART OF LAC 55 VASCOFGAM, MED															
L 4	1	116	42.27S	81.34W	33	000	050123	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	3006K	4927869	95	4.7 16 -0.00
CAM. RAD.= 41.46S 92.48W SWING= 293. PHASE= 87. EMIS. ANG.= 13. CAM. RAD.= 4745.2 KM. SUN AZH= 74.2															
LAC 109 PIAZZI, V. BOUVARD; LAC 135 PINGRE N. HAUSEN; LAC 124 PHOCLIDES & LAC 123 STEKLOV															
L 4	1	167	14.97S	89.06W	33	000	053334	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	2723K	4463934	145	0.5 14 -0.43
CAM. RAD.= 14.36S 89.48W SWING= 330. PHASE= 77. EMIS. ANG.= 1. CAM. RAD.= 4462.2 KM. SUN AZH= 85.4															
LAC 73 RICCIOLI, NE-ORIENTAL; LAC 90 LOWELL; LAC 108 M. ORIENT (SW 1/3 W) & LAC 91 EICHSTADT, SE															
L 4	1	194	42.97S	86.50W	34	000	170147	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	3003K	4922951	100	5.3 16 -0.90
CAM. RAD.= 42.01S 99.09W SWING= 297. PHASE= 88. EMIS. ANG.= 15. CAM. RAD.= 4742.2 KM. SUN AZH= 73.3															
LAC 123 STEKLOV; LAC 109 PIAZZI, V. BOUVARD; LAC 135 PINGRE N. HAUSEN & LAC 124 PHOCLIDES															

MIS SION	MAG NOLL	FR, PHOTO UN	PRIN, PT. LAT.	ORB N	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE	SCALE AT PRIN.	T I L T AZ	SUN SIDE, ANG. ANG. FWD. FR. LAP VERT 8. 8
L 4	1	195	14.91S	94.60W	34	***	0000 173356	5-25-67 LUNAR ORB MI. 610MM B&W	-	NONE	2721K	4460656	109 1.0 15 -0.48
		CAM. RAD. = 14.40S		96.11W	SWING = 294.		PHASE = 78.	EMIS. ANG. = 3.		CAM. RAD. = 4460.2 KM.		SUN AZ = 85.2	
		EASTERN PART OF		LAC 90 LUNELL		: LAC 10A M. ORIENTS & LAC 91 EICHSTADT, SE. ORIENTAL							

TOTAL PHOTOS IN THIS GROUP = 10

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. % = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTAR, EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREN; 2P, 2B, 2S = ZEISS LENS (PLANAR, BIOGEN, SONAR); FOCAL LENGTH (MM) & MAX. F-OPENING  
 10\* AS EXPOS. SPEED = 1/1000 (ON \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMI	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	TILT	SUN SIDE,
SUN ROLL	OR	LAT.	#	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FND.
M	M	MAIN	LONG.	(=ESTIMATED)				TYPE		M=N.MI	PT.	FR.	LAF
										K=KM.	VERT	%.	%.
L 4	2	144	14.04N	41.77W	26	***	175854	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2469K	33362500 280 0.5 19 -0.78
			CAM.NAD.= 13.90N	41.01W		SWING= 94.	PHASE= 70.	EMIS.ANG.= 1.	CAM.RAD.=	4408.2 KM.		SUN AZM= 94.3	
			LAC 57 KEPLER, ENC 1	>1/2 MOON SPHERE			LAC 92 BYRGIUS, DA		LAC 10 BABBAGE, N. PROCELARM.			LAC 26 EUDOXUS, RURG	
L 4	1	148	42.95S	41.38W	27	***	045722	5-22-67	LUNAR ORB HI. 610MM B&W	-	NONE	3009K	4932787 99 4.6 18 -0.00
			CAM.NAD.= 42.11S	52.33W		SWING= 297.	PHASE= 84.	EMIS.ANG.= 13.	CAM.RAD.=	4748.2 KM.		SUN AZM= 71.6	
			LAC 110 SCHICKARD	LAC 111 WILHELM, E			LAC 125 SCHILLER,		LAC 92 BYRGIUS, DARWIN			LAC 93 M. HUMOR., GASS	
L 4	1	149	15.05S	48.76W	27	***	052940	5-22-67	LUNAR ORB HI. 610MM B&W	-	NONE	2720K	4459016 127 0.7 18 -0.49
			CAM.NAD.= 14.40S	49.64W		SWING= 313.	PHASE= 74.	EMIS.ANG.= 2.	CAM.RAD.=	4459.2 KM.		SUN AZM= 84.4	
			LAC 75 LETRONNE, F	LAC 74 GRIMALDI, B			LAC 92 BYRGIUS, DA		LAC 93 M. HUMOR., GASSENDI			LAC 56 HEVELIUS, REIN	
L 4	2	150	12.70N	49.29W	27	***	060012	5-22-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2468K	33350000 234 1.3 18 -0.11
			CAM.NAD.= 13.91N	47.59W		SWING= 48.	PHASE= 70.	EMIS.ANG.= 3.	CAM.RAD.=	4407.2 KM.		SUN AZM= 93.5	
			LAC 57 KEPLER, ENC 1	>1/2 MOON SPHERE			LAC 92 BYRGIUS, DA		LAC 11 J. HERSCHEL, JURAS, ROUGIER			LAC 58 COPERNICUS, RE	
L 4	1	155	42.41S	48.89W	28	***	165826	5-22-67	LUNAR ORB HI. 610MM B&W	-	NONE	3011K	4936066 95 4.3 17 -0.90
			CAM.NAD.= 42.07S	59.07W		SWING= 293.	PHASE= 84.	EMIS.ANG.= 12.	CAM.RAD.=	4750.2 KM.		SUN AZM= 72.8	
			CENTRAL PART OF LAC 110 SCHICKARD	LAC 111 WILHELM, EL			LAC 125 SCHILLER,		LAC 92 BYRGIUS, DARWIN			LAC 93 M. HUMOR.,	
L 4	1	156	14.88S	55.80W	28	***	173043	5-22-67	LUNAR ORB HI. 610MM B&W	-	NONE	2722K	4462295 136 0.4 17 -0.49
			CAM.NAD.= 14.39S	56.24W		SWING= 321.	PHASE= 74.	EMIS.ANG.= 1.	CAM.RAD.=	4461.2 KM.		SUN AZM= 84.7	
			EASTERN PART OF LAC 74 GRIMALDI, B	EASTERN PART OF LAC 92 BYRGIUS, DA			LAC 56 HEVELIUS, REINER		LAC 93 M. HUMOR., GASS				
L 4	2	157	13.36N	56.27W	28	***	180116	5-22-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2469K	33362500 255 1.4 17 -0.58
			CAM.NAD.= 13.41N	54.17W		SWING= 69.	PHASE= 70.	EMIS.ANG.= 3.	CAM.RAD.=	4408.2 KM.		SUN AZM= 93.4	
			LAC 56 HEVELIUS, R	>1/2 MOON SPHERE			LAC 92 BYRGIUS, DA		LAC 10 BABBAGE, N. PROCELARM.			LAC 25 CASSINI, ALPS	
L 4	1	160	42.79S	54.52W	29	***	045917	5-23-67	LUNAR ORB HI. 610MM B&W	-	NONE	3012K	4937705 99 4.8 17 -0.00
			CAM.NAD.= 42.03S	65.80W		SWING= 296.	PHASE= 85.	EMIS.ANG.= 13.	CAM.RAD.=	4751.2 KM.		SUN AZM= 72.3	
			LAC 110 SCHICKARD	WESTERN PART OF LAC 125 SCHILLER,			SOUTHERN PART OF LAC 92 BYRGIUS, DARWIN		LAC 124 PHOCLIDES				
L 4	1	161	15.13S	61.98W	29	***	053134	5-23-67	LUNAR ORB HI. 610MM B&W	-	NONE	2723K	4463934 129 0.8 17 -0.48
			CAM.NAD.= 14.36S	62.94W		SWING= 315.	PHASE= 75.	EMIS.ANG.= 2.	CAM.RAD.=	4462.2 KM.		SUN AZM= 84.7	
			CENTRAL PART OF LAC 74 GRIMALDI, B	CENTRAL PART OF LAC 92 BYRGIUS, DA			LAC 56 HEVELIUS, REINER		LAC 109 PIAZZI, V. ROU				

MIS SION	MAG ROLL	FR, PHOTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR M SEC (:=ESTIMATED)	GMT M-DA-YH	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. M=N.MI K=KM.	T I L T AZ PR.	SUN SIDE, ANG. FR.	ANG. VERT	SIDE, FWD. LAP
L 4	1	167	42.015	60.70W	30 ***	170012	5-23-67 LUNAR ORB HI. 610MM B&W	- NONE	3009K	4932707	95	5.0	17	-.00
CAM. RAD. = 41.825 72.48W SWING = 292. PHASE = 86. EMIS. ANG. = 14. CAM. RAD. = 4748.2 KM. SUN AZH = 72.6														
LAC 110 SCHICKARD ; LAC 109 PIAZZI, V. ; LAC 124 PHOCLIDE ; LAC 125 SCHILLER, SEGNER 6 LAC 91 EICHSTADT, SE.														
L 4	1	168	14.45S	68.18W	30 ***	173229	5-23-67 LUNAR ORB HI. 610MM B&W	- NONE	2722K	4462295	103	9	17	-.47
CAM. RAD. = 14.14S 69.56W SWING = 288. PHASE = 76. EMIS. ANG. = 2. CAM. RAD. = 4461.2 KM. SUN AZH = 84.9														
LAC 74 GHIMALDI, BILLY ; LAC 73 RICCIOLI, NE. ORIENTAL ; LAC 91 EICHSTADT, SE. ORIENTAL 6 LAC 92 BYRGIUS, DARW														
L 4	1	172	42.94S	67.94W	31 ***	050029	5-24-67 LUNAR ORB HI. 610MM B&W	- NONE	3011K	4936046	100	4.8	16	-.00
CAM. RAD. = 41.98S 79.20W SWING = 297. PHASE = 86. EMIS. ANG. = 13. CAM. RAD. = 4750.2 KM. SUN AZH = 73.1														
LAC 109 PIAZZI, V. ; LAC 110 SCHICKARD ; LAC 124 PHOCLIDE ; LAC 125 SCHILLER, SEGNER 6 LAC 91 EICHSTADT, SE.														
L 4	1	173	14.77S	75.41W	31 ***	053243	5-24-67 LUNAR ORB HI. 610MM B&W	- NONE	2724K	4465574	116	6	15	-.46
CAM. RAD. = 14.37S 76.23W SWING = 301. PHASE = 76. EMIS. ANG. = 1. CAM. RAD. = 4463.2 KM. SUN AZH = 85.1														
EASTERN PART OF LAC 73 RICCIOLI, NE. ORIENTAL ; EASTERN PART OF LAC 91 EICHSTADT, SE. ORIENTAL 1 LAC 55 VASCO DE GAMA 6 LAC 92 BY														

TOTAL PHOTOS IN THIS GROUP = 13

THESE 10 SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG# B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; 2P, 2B, 2S = ZEISS LENS(PLANAR,BIOTEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10° AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GEI	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	I	L	T	SUN	SIDE,
SION	ROLL	OR	LAT.	#	TIMES-HR	M	SEC			SENSOR	AND FILTER	TUDF	PRIN.	AZ	ANG.	ANG.	FWD.			
"	"	MAIN	LONG.	(=ESTIMATED)						TYPE		M=N.MI	PT.	FR.	LAP					
												K=KM.			VERT					
L 4	2	130	65.025	25.85W	24	000	0000	161143	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3575K	446R7500	46	4.1	9	-..		
			CAM.NAD.= 71.625	40.64W			SWING= 211.		PHASE= 91.	EMIS.ANG.= 13.		CAM.RAD.=	5314.2 KM.		SUN AZM= 69.3					
			LAC 137 NEWTON,MO				>1/2 MOON SPHERE		LAC 133 PRANDTL			LAC 93 M.HUMOR.,GASSENDI								
L 4	1	131	36.515	23.47W	24	000	0000	165252	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	2999K	4916393	52	5.0	20	-..		
			CAM.NAD.= 42.205	32.12W			SWING= 251.		PHASE= 83.	EMIS.ANG.= 14.		CAM.RAD.=	4738.2 KM.		SUN AZM= 74.0					
			LAC 111 WILHELM,ELGER,HEE						LAC 112 TYCHO,STOFER			LAC 93 M.HUMOR.,GASSENDI								
L 4	1	132	9.145	29.59W	24	000	0000	172507	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	2717K	4454098	1	3.4	19	-50		
			CAM.NAD.= 14.425	29.69W			SWING= 188.		PHASE= 72.	EMIS.ANG.= 9.		CAM.RAD.=	4456.2 KM.		SUN AZM= 86.2					
			LAC 76 RIPHAEUS HI,FRAU MAURO						LAC 75 LETRUNNE,FLAMSTU			LAC 93 M.HUMOR.,GASSENDI								
L 4	2	133	18.74N	29.69W	24	000	0000	175540	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2673K	33412500	340	3.3	19	-20		
			CAM.NAD.= 13.91N	27.86W			SWING= 156.		PHASE= 68.	EMIS.ANG.= 8.		CAM.RAD.=	4412.2 KM.		SUN AZM= 95.9					
			LAC 40 TIMOCHARIS,LAHBERT						>1/2 MOON SPHERE			LAC 93 M.HUMOR.,GASSENDI								
L 4	1	136	42.655	27.40W	25	000	0000	045435	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	3003K	4922951	97	4.8	19	-..		
			CAM.NAD.= 42.165	38.84W			SWING= 295.		PHASE= 83.	EMIS.ANG.= 13.		CAM.RAD.=	4742.2 KM.		SUN AZM= 70.3					
			LAC 111 WILHELM,E						LAC 125 SCHILLER,S			LAC 126 CLAVIUS,M								
									LAC 93 M.HUMOR.,GASSENDI											
L 4	1	137	14.985	35.28W	25	000	0000	052651	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	2718K	4455738	119	7	19	-48		
			CAM.NAD.= 14.405	36.33W			SWING= 305.		PHASE= 73.	EMIS.ANG.= 2.		CAM.RAD.=	4457.2 KM.		SUN AZM= 84.1					
			EASTERN PART OF LAC 75 LETRUNNE,F						EASTERN PART OF LAC 93 M.HUMOR.,GASSENDI											
L 4	1	142	42.345	33.37W	26	000	0000	165605	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	3007K	4929508	93	5.2	20	-..		
			CAM.NAD.= 42.145	45.58W			SWING= 291.		PHASE= 84.	EMIS.ANG.= 14.		CAM.RAD.=	4746.2 KM.		SUN AZM= 70.4					
			WESTERN PART OF LAC 111 WILHELM,EL						LAC 125 SCHILLER,S			LAC 126 CLAVIUS,M								
									LAC 93 M.HUMOR.,GASSENDI											
L 4	1	143	14.305	41.41W	26	000	0000	172822	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	2719K	4457377	85	1.0	19	-47		
			CAM.NAD.= 14.415	42.98W			SWING= 271.		PHASE= 74.	EMIS.ANG.= 3.		CAM.RAD.=	4458.2 KM.		SUN AZM= 84.3					
			CENTRAL PART OF LAC 75 LETRUNNE,FLAMSTU						CENTRAL PART OF LAC 93 M.HUMOR.,GASSENDI											
												S. W. PART OF LAC 57 KEPLER,ENCKE								

MIS SION	MAG #	FR. PHOTO OR MAIN	PRIN. PT. LAT. LONG.	ORB #	GET TIMES-HR (ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=M.HI K=KM.	SCALE AT PRIN. PT.	T I L T AZ ANG. FR. VERT	SUN SIDE, ANG. FWD. LAP R. R
L 4 1	148	42.955	41.38N	27	000	045722	5-22-67	LUNAR ORB HI. 610MM B&W	- NONE	3009K	4932787	99	4.6 18 -...
CAM-NAO.= 42.115 52.33W SWING= 297. PHASE= 84. EMIS-ANG.= 13. CAM-RAD.= 4748.2 KM. SUN AZM= 71.6													
LAC 110 SCHICKARD ; LAC 111 WILHELM, E ; LAC 125 SCHILLER, ; LAC 92 BYRGIUS, DARWIN & LAC 93 M.HUMOR., GASS													
L 4 1	149	15.055	48.76N	27	000	052940	5-22-67	LUNAR ORB HI. 610MM B&W	- NONE	2720K	4459016	127	.7 18 -.49
CAM-NAO.= 14.405 49.64W SWING= 313. PHASE= 74. EMIS-ANG.= 2. CAM-RAD.= 4459.2 KM. SUN AZM= 84.4													
LAC 75 LETHBRIDGE ; LAC 74 GRIMALDI, B ; LAC 92 BYRGIUS, DA ; LAC 93 M.HUMOR., GASSENDI & LAC 56 HEVELIUS, REIN													
L 4 2	154	71.735	33.52N	28	000	161555	5-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	3613K	45162500	105	5.2 11 -...
CAM-NAO.= 72.075 69.24W SWING= 268. PHASE= 94. EMIS-ANG.= 16. CAM-RAD.= 5352.2 KM. SUN AZM= 52.2													
LAC 137 NEWTON, HO ; >1/4 MOON SPHERE ; LAC 129 M.AUSTRAL ; LAC 74 GRIMALDI, HILLY & LAC 93 M.HUMOR., GASS													
L 4 1	155	42.415	48.89N	28	000	165826	5-22-67	LUNAR ORB HI. 610MM B&W	- NONE	3011K	4936066	95	4.3 17 -.90
CAM-NAO.= 42.075 59.07W SWING= 293. PHASE= 84. EMIS-ANG.= 12. CAM-RAD.= 4750.2 KM. SUN AZM= 72.8													
CENTRAL PART OF LAC 110 SCHICKARD ; LAC 111 WILHELM, EL ; LAC 125 SCHILLER, ; LAC 92 BYRGIUS, DARWIN & LAC 93 M.HUMOR.,													
L 4 1	156	14.885	55.80N	28	000	173043	5-22-67	LUNAR ORB HI. 610MM B&W	- NONE	2722K	4462295	136	.4 17 -.49
CAM-NAO.= 14.395 56.29W SWING= 321. PHASE= 74. EMIS-ANG.= 1. CAM-RAD.= 4461.2 KM. SUN AZM= 84.7													
EASTERN PART OF LAC 74 GRIMALDI, B ; EASTERN PART OF LAC 92 BYRGIUS, DA ; LAC 56 HEVELIUS, REINER & LAC 93 M.HUMOR., GASS													
L 4 2	166	71.315	60.23N	30	000	161844	5-23-67	LUNAR ORB LO.F=80MM B&W	- NONE	3593K	44912500	101	3.4 7 -...
CAM-NAO.= 71.195 82.44W SWING= 264. PHASE= 93. EMIS-ANG.= 10. CAM-RAD.= 5332.2 KM. SUN AZM= 66.4													
LAC 136 BAILLEY, K ; >1/2 MOON SPHERE ; LAC 129 M.AUSTRAL ; LAC 73 RICCIOLI, NE. ORIENTAL & LAC 93 M.HUMOR., GASS													
L 4 2	169	13.70N	68.49N	30	000	180302	5-23-67	LUNAR ORB LO.F=80MM B&W	- NONE	2472K	33490000	248	.8 17 -.78
CAM-NAO.= 14.14N 67.33W SWING= 62. PHASE= 71. EMIS-ANG.= 2. CAM-RAD.= 4411.2 KM. SUN AZM= 93.5													
LAC 56 HEVELIUS, R ; >1/2 MOON SPHERE ; LAC 109 PIAZZI, V. ; LAC 21 N.GERARD, BOOLE & LAC 12 PLATO, ALPINE													
L 4 2	174	13.37N	76.00W	31	000	060318	5-24-67	LUNAR ORB LO.F=80MM B&W	- NONE	2473K	33412500	255	1.3 16 -.50
CAM-NAO.= 13.91N 73.95W SWING= 69. PHASE= 71. EMIS-ANG.= 3. CAM-RAD.= 4412.2 KM. SUN AZM= 93.0													
LAC 55 VASCOUEGAN ; >1/2 MOON SPHERE ; LAC 109 PIAZZI, V. ; LAC 21 N.GERARD, BOOLE & LAC 24 SINUS IRIDUM													
L 4 2	179	69.525	74.07N	32	000	161924	5-24-67	LUNAR ORB LO.F=80MM B&W	- NONE	3592K	44900000	84	3.6 7 -...
CAM-NAO.= 71.385 96.22W SWING= 246. PHASE= 94. EMIS-ANG.= 11. CAM-RAD.= 5331.2 KM. SUN AZM= 68.2													
LAC 136 BAILLEY, K ; >1/2 MOON SPHERE ; LAC 129 M.AUSTRAL ; LAC 108 M.ORIENTIS (2/3 W) & LAC 93 M.HUMOR., GASS													
L 4 2	182	15.26N	81.42N	32	000	180342	5-24-67	LUNAR ORB LO.F=80MM B&W	- NONE	2474K	33425000	329	1.0 16 -.66
CAM-NAO.= 13.86N 80.57W SWING= 143. PHASE= 72. EMIS-ANG.= 3. CAM-RAD.= 4413.2 KM. SUN AZM= 93.7													
LAC 55 VASCOUEGAN ; >1/2 MOON SPHERE ; LAC 123 STEKLOV ; LAC 21 N.GERARD, BOOLE & LAC 24 SINUS IRIDUM													
L 4 2	194	42.975	86.51N	34	000	170147	5-25-67	LUNAR ORB LO.F=80MM B&W	- NONE	3003K	37537500	100	5.3 16 -...
CAM-NAO.= 42.015 99.09W SWING= 297. PHASE= 88. EMIS-ANG.= 15. CAM-RAD.= 4742.2 KM. SUN AZM= 73.3													
DEGRADED NEGATIVE ; LAC 123 STEKLOV ; >1/2 MOON SPHERE ; LAC 134 BOLTZMANN & LAC 90 LOWELL													
L 5 1	168	30.545	37.60N	70	000	040440	8-17-67	LUNAR ORB HI. 610MM B&W	- NONE	169K	277049	255	9.8 10 -...
CAM-NAO.= 30.305 36.51W SWING= 159. PHASE= 70. EMIS-ANG.= 11. CAM-RAD.= 1908.2 KM. SUN AZM= 82.6													
S. E. PART OF LAC 93 M.HUMOR., GASSENDI													

MIS	HAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	TILT	SUN SIDE
SUN	MULL	OR	LAT.	"	TIMES-HR	M SEC		SENSOR	AND FILTER	TIDE	PRIN.	AZ	ANG. ANG. FAD.
"	"	MAIN	LONG.		(ESTIMATED)			TYPE		M=N, MI	PT.	FR.	LAP
		"								K=KH.		VERT	B. 8
L 5	2	168	30.53S	37.61W	70	000	040441	8-17-67 LUNAR ORB LO.F=80MM R6W	-	NONE	167K	2112500	255 9.9 10 -...
CAM.RAD.= 30.36S 36.51W SWING= 160. PHASE= 70. EMIS.ANG.= 11. CAM.RAD.= 1908.2 KM. SUN AZH= 82.6													
S. E. PART OF LAC 93 M.HUMOR.,GASSENDI ; N. W. PART OF LAC 111 WILHELM, E 6 N. E. PART OF LAC 110 SCHICKARD, L													
L 5	1	177	19.03S	40.19W	73	000	134107	8-17-67 LUNAR ORB HI. 610MM R6W	-	NONE	131K	214754	131 6.8 13 -...
CAM.RAD.= 18.69S 40.61W SWING= 37. PHASE= 82. EMIS.ANG.= 7. CAM.RAD.= 1870.2 KM. SUN AZH= 83.9													
NORTHERN PART OF LAC 93 M.HUMOR.,GASSENDI													
L 5	2	177	19.02S	40.21W	73	000	134107	8-17-67 LUNAR ORB LO.F=80MM R6W	-	NONE	131K	1637500	131 6.7 13 -...
CAM.RAD.= 18.68S 40.61W SWING= 38. PHASE= 82. EMIS.ANG.= 7. CAM.RAD.= 1870.2 KM. SUN AZH= 83.9													
NORTHERN PART OF LAC 93 M.HUMOR.,GASSENDI													
L 5	1	178	17.60S	40.09W	73	000	134131	8-17-67 LUNAR ORB HI. 610MM R6W	-	NONE	127K	208197	121 6.1 13 -...
CAM.RAD.= 17.36S 40.49W SWING= 27. PHASE= 82. EMIS.ANG.= 7. CAM.RAD.= 1866.2 KM. SUN AZH= 84.2													
NORTHERN PART OF LAC 93 M.HUMOR.,GASSENDI													
L 5	2	178	17.59S	40.09W	73	000	134131	8-17-67 LUNAR ORB LO.F=80MM R6W	-	NONE	127K	1587500	121 6.0 13 -.52
CAM.RAD.= 17.35S 40.48W SWING= 27. PHASE= 82. EMIS.ANG.= 6. CAM.RAD.= 1866.2 KM. SUN AZH= 84.2													
NORTHERN PART OF LAC 93 M.HUMOR.,GASSENDI													
L 5	1	179	16.21S	39.97W	73	000	134154	8-17-67 LUNAR ORB HI. 610MM R6W	-	NONE	124K	203279	109 5.7 14 -...
CAM.RAD.= 16.07S 40.37W SWING= 15. PHASE= 82. EMIS.ANG.= 6. CAM.RAD.= 1863.2 KM. SUN AZH= 84.5													
NORTHERN PART OF LAC 93 M.HUMOR.,GASSENDI 6 SOUTHERN PART OF LAC 75 LETHONNE,FLAMSTD													
L 5	2	179	16.20S	39.97W	73	000	134154	8-17-67 LUNAR ORB LO.F=80MM R6W	-	NONE	124K	1550000	109 5.6 14 -.52
CAM.RAD.= 16.07S 40.36W SWING= 15. PHASE= 82. EMIS.ANG.= 6. CAM.RAD.= 1863.2 KM. SUN AZH= 84.5													
NORTHERN PART OF LAC 93 M.HUMOR.,GASSENDI 6 SOUTHERN PART OF LAC 75 LETHONNE,FLAMSTD													
L 5	2	180	14.83S	39.87W	73	000	134217	8-17-67 LUNAR ORB LO.F=80MM R6W	-	NONE	122K	1525000	96 5.4 14 -.51
CAM.RAD.= 14.79S 40.26W SWING= 2. PHASE= 82. EMIS.ANG.= 6. CAM.RAD.= 1861.2 KM. SUN AZH= 84.8													
SOUTHERN PART OF LAC 75 LETHONNE,FLAMSTD 6 NORTHERN PART OF LAC 93 M.HUMOR.,GASSENDI													

TOTAL PHOTOS IN THIS GROUP = 28



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTR 2.8 LENS;  
 HSB= HASSELBLAD; MAUN= MAURER; 2P, 20, 25 = ZEISS LENS(PLANAR, BIOGEN, SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (UN \*\* TWO ZEMOS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	TILT	SUN	SIDE
SION	ROLL	OR	LAT.	LONG.	"	TIMES-HR	M	SEC		SENSOR	AND FILTER	TUDE	PRIN.	PT.	AZ	ANG.	FWD.
"	"	MAIN	"	"	"	(=ESTIMATED)				TYPE		M=N.MI	K=KM.		FR.	LAP	R. R
L 4	2	109	13.79N	3.58W	20	0000	174732	5-18-67	LUNAR ORB LO.F=80MM B6W	-	NONE	2693K	336625ND	267	1.3	21	-.67
CAM.NAD.= 13.89N 1.48W SWING= 82. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4432.2 KM. SUN AZM= 94.7																	
LAC 59 M.VAPORUM, HYGINUS ; W>1/2 MOON SPHERE ; LAC 12 PLATO, ALPINE VAL. 6 LAC 61 TARANTULUS, LY																	
L 4	1	112	42.58S	1.35W	21	0000	044650	5-19-67	LUNAR ORB HI. 610MM B6W	-	NONE	2986K	48950RZ	95	4.6	20	-.00
CAM.NAD.= 42.26S 12.09W SWING= 294. PHASE= 81. EMIS.ANG.= 13. CAM.RAD.= 4725.2 KM. SUN AZM= 69.7																	
LAC 112 TYCHO, STÖFLER ; LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 126 CLAVIUS, MAGNUS 6 LAC 127 HOMMEL, VLAC																	
L 4	1	113	14.64S	9.51W	21	0000	051900	5-19-67	LUNAR ORB HI. 610MM B6W	-	NONE	2718K	445573B	123	.2	20	-.47
CAM.NAD.= 14.45S 9.81W SWING= 310. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4457.2 KM. SUN AZM= 83.9																	
LAC 77 PTOLMAEUS, I LAC 76 RHPHAEUS M ; LAC 95 PURBACH, AR ; LAC 94 PITATUS, M. NUBIUM 6 LAC 58 COPERNICUS, RE																	
L 4	2	118	72.49S	6.99W	22	0000	160805	5-19-67	LUNAR ORB LO.F=80MM B6W	-	NONE	3555K	4443750D	107	3.0	8	-.00
CAM.NAD.= 71.67S 26.89W SWING= 275. PHASE= 90. EMIS.ANG.= 9. CAM.RAD.= 5294.2 KM. SUN AZM= 62.0																	
LAC 137 NEUTON, MU ; W>1/2 MOON SPHERE ; LAC 131 PHANTOL ; LAC 116 M.AUSTRALIS, JENNER 6 LAC 94 PITATUS, M. NUBIUM																	
L 4	1	119	42.79S	7.44W	22	0000	164855	5-19-67	LUNAR ORB HI. 610MM B6W	-	NONE	2991K	4903279	97	4.8	20	-.00
CAM.NAD.= 42.26S 18.74W SWING= 295. PHASE= 82. EMIS.ANG.= 13. CAM.RAD.= 4730.2 KM. SUN AZM= 69.1																	
LAC 112 TYCHO, STO ; LAC 126 CLAVIUS, M ; LAC 127 HOMMEL, VL ; LAC 94 PITATUS, M. NUBIUM 6 LAC 95 PURBACH, ARZAC																	
L 4	1	120	14.29S	15.64W	22	0000	172107	5-19-67	LUNAR ORB HI. 610MM B6W	-	NONE	2718K	445573B	77	.5	20	-.49
CAM.NAD.= 14.46S 16.43W SWING= 263. PHASE= 71. EMIS.ANG.= 1. CAM.RAD.= 4457.2 KM. SUN AZM= 84.0																	
EASTERN PART OF LAC 76 RHPHAEUS M ; EASTERN PART OF LAC 94 PITATUS, M. ; LAC 95 PURBACH, ARZACHEL 6 LAC 58 COPERNICUS, RE																	
L 4	1	124	43.00S	14.08W	23	0000	045059	5-20-67	LUNAR ORB HI. 610MM B6W	-	NONE	2994K	4900197	99	4.8	20	-.00
CAM.NAD.= 42.21S 25.42W SWING= 297. PHASE= 82. EMIS.ANG.= 13. CAM.RAD.= 4733.2 KM. SUN AZM= 69.4																	
EASTERN PART OF LAC 111 WILHELM, F ; LAC 112 TYCHO, STO ; SOUTHERN PART OF LAC 94 PITATUS, M. NUBIUM 6 LAC 126 CLAVIUS, MAGNUS																	
L 4	2	124	43.00S	14.08W	23	0000	045059	5-20-67	LUNAR ORB LO.F=80MM B6W	-	NONE	2994K	3742500D	99	4.8	20	-.00
CAM.NAD.= 42.20S 25.42W SWING= 297. PHASE= 82. EMIS.ANG.= 13. CAM.RAD.= 4733.2 KM. SUN AZM= 69.4																	
LAC 111 WILHELM, F ; W>1/2 MOON SPHERE ; LAC 94 PITATUS, M. ; LAC 77 PTOLMAEUS, KLEIN 6 LAC 144 SCOTT, S. POLE																	
L 4	1	125	19.89S	22.97W	23	0000	052313	5-20-67	LUNAR ORB HI. 610MM B6W	-	NONE	2717K	445409B	170	.3	19	-.44
CAM.NAD.= 14.40S 23.06W SWING= 356. PHASE= 71. EMIS.ANG.= 1. CAM.RAD.= 4456.2 KM. SUN AZM= 84.2																	
WESTERN PART OF LAC 76 RHPHAEUS M, FRANK MAURO ; CENTRAL PART OF LAC 94 PITATUS, M. 6 S. W. PART OF LAC 58 COPERNICUS, R																	

## LAC 94 PITATUS, M. NUBIUM

MIS SION	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET TIMES-HR M SEC (ESTIMATED)	GMT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.MI K=KM.	SCALE PRIN. PT.	TILT AZ	SUN SIDE, ANG. FR.	FWD. LAP S. R
L 4	1	131	36.51S	23.47W	24	...	165252	5-20-67	LUNAR ORB HI.	610MM B&W	- NONE	2999K	4916393	52	5.0 20	-...
CAM.NAD.= 42.26S 32.12W SWING= 251. PHASE= 83. EMIS.ANG.= 14. CAM.RAD.= 4738.2 KM. SUN AZM= 74.0																
LAC 111 WILHELM, ELGER, MEE ; LAC 112 TYCHO, STUFLER ; LAC 93 M. HUMOR., GASSENDI ; LAC 94 PITATUS, M. NU																
L 4	1	132	9.14S	29.59W	24	...	172507	5-20-67	LUNAR ORB HI.	610MM B&W	- NONE	2717K	4454098	1	3.4 19	-50
CAM.NAD.= 14.42S 29.69W SWING= 188. PHASE= 72. EMIS.ANG.= 9. CAM.RAD.= 4456.2 KM. SUN AZM= 86.2																
LAC 76 RIPHAEUS MT. FRAU MAURO ; LAC 75 LETRONNE, FLAMSTED ; LAC 93 M. HUMOR., GASSENDI ; LAC 94 PITATUS, M. NU																
L 4	1	136	42.65S	27.40W	25	...	045435	5-21-67	LUNAR ORB HI.	610MM B&W	- NONE	3003K	4922951	97	4.8 19	-...
CAM.NAD.= 42.16S 38.84W SWING= 295. PHASE= 83. EMIS.ANG.= 13. CAM.RAD.= 4742.2 KM. SUN AZM= 70.3																
LAC 111 WILHELM, E ; LAC 125 SCHILLER, ; LAC 126 CLAVIUS, M ; LAC 93 M. HUMOR., GASSENDI ; LAC 94 PITATUS, M. NUB																
L 4	1	137	14.98S	35.28W	25	...	052651	5-21-67	LUNAR ORB HI.	610MM B&W	- NONE	2718K	4455738	119	.7 19	-48
CAM.NAD.= 14.40S 36.33W SWING= 305. PHASE= 73. EMIS.ANG.= 2. CAM.RAD.= 4457.2 KM. SUN AZM= 84.1																
EASTERN PART OF LAC 75 LETRONNE, F ; EASTERN PART OF LAC 93 M. HUMOR., GASSENDI ; LAC 94 PITATUS, M. NUBIUM																
L 4	2	144	14.04N	41.77W	26	...	175854	5-21-67	LUNAR ORB LO.	F=80MM B&W	- NONE	2469K	33362500	280	.5 19	-78
CAM.NAD.= 13.90N 41.01W SWING= 94. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 4408.2 KM. SUN AZM= 94.3																
LAC 57 KEPLER, ENC 1 ; >1/2 MOON SPHERE ; LAC 92 BYRGJUS, DA ; LAC 10 BABBAGE, N. PROCELARH. ; LAC 26 EUDOXUS, BURG																
L 4	2	158	42.00N	47.66W	28	...	183333	5-22-67	LUNAR ORB LO.	F=80MM B&W	- NONE	2866K	35825000	106	1.7 20	-...
CAM.NAD.= 42.85N 51.22W SWING= 271. PHASE= 75. EMIS.ANG.= 4. CAM.RAD.= 4405.2 KM. SUN AZM= 107.7																
LAC 23 HUMKER, SHARP ; >1/2 MOON SPHERE ; LAC 73 RICCIOLI, NE. ORIENTAL ; LAC 1 N. POLE NEARSI																
L 4	2	162	13.23N	62.18W	29	...	060208	5-23-67	LUNAR ORB LO.	F=80MM B&W	- NONE	2670K	33375000	243	1.0 17	-78
CAM.NAD.= 13.93N 60.75W SWING= 57. PHASE= 71. EMIS.ANG.= 3. CAM.RAD.= 4409.2 KM. SUN AZM= 93.4																
LAC 56 HEVELIUS, R ; >1/2 MOON SPHERE ; LAC 109 PIAZZI, V. ; LAC 21 N. GERARD, BOOLE ; LAC 25 CASSINI, ALPS																
L 4	2	173	14.76S	75.41W	31	...	053243	5-24-67	LUNAR ORB LO.	F=80MM B&W	- NONE	2724K	34050000	116	.6 15	-7
CAM.NAD.= 14.37S 76.23W SWING= 301. PHASE= 76. EMIS.ANG.= 1. CAM.RAD.= 4463.2 KM. SUN AZM= 85.1																
LAC 73 RICCIOLI, NE. ORIENTAL ; >1/2 MOON SPHERE ; LAC 143 S. HAUSEN LERENTIL ; LAC 36 RONTGEN LORE																

TOTAL PHOTOS IN THIS GROUP = 17

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B-BRACKET MOUNTED; G- CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EXTR=EXTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREN; ZP,ZH,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	TILT	SUN SIDE
STON	NULL	OR	LAT.	N	TIMES-HR	M SEC		SENSOR	AND FILTER	TURE	PRIN.	AZ	ANG.
#	#	MAIN	LUNG.		(I=ESTIMATED)			TYPE		M=MM, NI	PT.	FR.	LAP
										K=KM.		VERT	R. R
L 4	2	90° 13.75N	15.87E	17	***	054135	5-17-67	LUNAR ORB LU.F=80MM B&W	-	NONE	2711K 33AR75ND	267	1.6 22 -0.71
		CAM.HAD.= 13.89N	18.39E		SWING= 82.	PHASE= 64.		EMIS.ANG.= 4.		CAM.RAD.= 4450.2 KM.		SUN AZH= 95.0	
		LAC 60 J.CAESAR, SABINE, JANSEN			W>1/2 MOON SPHERE			LAC 26 EUDOXUS, BU		LAC 95 PURBACH, ARZACHEL		LAC 97 FRACASTORI	
L 4	1	95 42.54S	18.70E	18	***	164033	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2976K 4R78689	95	4.7 22 -0.00
		CAM.HAD.= 42.27S	7.64E		SWING= 294.	PHASE= 80.		EMIS.ANG.= 13.		CAM.RAD.= 4715.2 KM.		SUN AZH= 67.9	
		WESTERN PART OF LAC 113 MAUROLYCUS, RAB. LEVI						LAC 127 HOMMEL, VL		LAC 127 HOMMEL, VL		LAC 127 HOMMEL, VL	
L 4	1	76 15.18S	10.67E	18	***	171241	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2722K 4462295	138	0.6 22 -0.46
		CAM.HAD.= 14.45S	9.99E		SWING= 324.	PHASE= 69.		EMIS.ANG.= 2.		CAM.RAD.= 4461.2 KM.		SUN AZH= 83.2	
		LAC 78 THEOPHILUS						LAC 95 PURBACH, AR		LAC 96 ALTAI SCARP, GEBER		LAC 59 M.VAPORUM, HYG	
L 4	1	100 42.72S	12.29E	19	***	044237	5-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	2978K 4R81967	96	4.8 21 -0.00
		CAM.HAD.= 42.26S	1.05E		SWING= 295.	PHASE= 81.		EMIS.ANG.= 13.		CAM.RAD.= 4717.2 KM.		SUN AZH= 68.0	
		WESTERN PART OF LAC 113 MAUROLYCUS, RAB. LEVI						LAC 112 TYCHO, STO		LAC 127 HOMMEL, VLAC			
L 4	1	101 15.19S	3.83E	19	***	051444	5-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	2720K 4459016	150	0.5 21 -0.45
		CAM.HAD.= 14.45S	3.38E		SWING= 336.	PHASE= 69.		EMIS.ANG.= 1.		CAM.RAD.= 4459.2 KM.		SUN AZH= 83.4	
		EASTERN PART OF LAC 77 PTOLMAEUS						LAC 95 PURBACH, AR		LAC 59 M.VAPORUM, HYGINUS		LAC 96 ALTAI SCARP, G	
L 4	1	108 14.26S	2.36N	20	***	171651	5-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	2719K 4457377	77	0.5 21 -0.43
		CAM.HAD.= 14.45S	3.17N		SWING= 262.	PHASE= 70.		EMIS.ANG.= 1.		CAM.RAD.= 4458.2 KM.		SUN AZH= 83.8	
		CENTRAL PART OF LAC 77 PTOLMAEUS, KLEIN						LAC 95 PURBACH, AR		S. W. PART OF LAC 59 M.VAPORUM, HY			
L 4	1	112 42.58S	1.35W	21	***	044650	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2986K 4R950R2	95	4.6 20 -0.00
		CAM.HAD.= 42.26S	12.09W		SWING= 294.	PHASE= 81.		EMIS.ANG.= 13.		CAM.RAD.= 4725.2 KM.		SUN AZH= 69.2	
		LAC 112 TYCHO, STOFFER						LAC 113 MAUROLYCUS, RAB. LEVI		LAC 126 CLAVIUS, MAGINUS		LAC 127 HOMMEL, VLAC	
L 4	1	113 14.64S	9.51W	21	***	051900	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2718K 445573R	123	0.2 20 -0.47
		CAM.HAD.= 14.45S	9.81W		SWING= 310.	PHASE= 70.		EMIS.ANG.= 1.		CAM.RAD.= 4457.2 KM.		SUN AZH= 83.9	
		LAC 77 PTOLMAEUS						LAC 95 PURBACH, AR		LAC 94 PITATUS, M. NUHIUM		LAC 50 COPERNICUS, RE	
L 4	1	119 42.79S	7.44W	22	***	164855	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2991K 4903279	97	4.8 20 -0.00
		CAM.HAD.= 42.26S	18.74W		SWING= 295.	PHASE= 82.		EMIS.ANG.= 13.		CAM.RAD.= 4730.2 KM.		SUN AZH= 69.1	
		LAC 112 TYCHO, STO						LAC 126 CLAVIUS, M		LAC 127 HOMMEL, VL		LAC 94 PITATUS, M. NUHIUM	
												LAC 95 PURBACH, ARZAC	

SUN	ROLL	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT		TILT		SUN SIDE,		
											TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	#	#	LAT.	LONG.	#	TIMES-HR M SEC (? = ESTIMATED)					M=N.MI K=KM.	PT.	FR.	VERT	LAP	R. X
L 4	1	120	14.27S	15.64W	22	***	****	172107	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2710K	4455738	77	5 20	- .49
CAM.NAD.= 14.46S 16.43W SWING= 263. PHASE= 71. EMIS.ANG.= 1. CAM.RAD.= 4457.2 KM. SUN AZH= 84.0																	
EASTERN PART OF LAC 76 RIPHAeus M ; EASTERN PART OF LAC 94 PITATUS, M. ; LAC 95 PURBACH, ANZACHEL & LAC 58 COPERNICUS, RE																	
L 4	2	133	18.74N	29.69W	24	***	****	175540	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2673K	33412500	340	3.3 19	- .20
CAM.NAD.= 13.91N 27.86W SWING= 156. PHASE= 68. EMIS.ANG.= 8. CAM.RAD.= 4412.2 KM. SUN AZH= 95.9																	
LAC 40 TIMUCARIS, LAMBERT ; >1/2 MOON SPHERE ; LAC 93 M. HUMOR., GASSFNDI & LAC 2 ANAXIMENES, PA																	

TOTAL PHOTOS IN THIS GROUP = 11

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, s = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-1, (.), 1), OR(0) = NO INFO w = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTW=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F.OOPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS);  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. OR MAIN	PHOTO OR LAT.	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES-HH M SEC (I=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.M) K=KM.	SCALE PRIN. PT.	AT T I L T AZ ANG. ANG. FWD. FR. LAP VERT S. X	SUN SIDE, ANG. ANG. FWD. FR. LAP VERT S. X	
L 4	1	76	42.77S	37.87E	15	***	043514	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2972K	4872131	97	4.5 22	-.00
CAM.NAD.= 42.21S 27.23E SWING= 296. PHASE= 79. EMIS.ANG.= 12. CAM.RAD.= 4711.2 KM. SUN AZH= 67.2																
LAC 114 RHEITA, JANSEN ; LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 127 HOMMEL, VLACO ; LAC 128 BIELA, WATT																
L 4	1	77	14.93S	30.15E	15	***	050718	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2730K	4475410	141	.4 23	-.49
CAM.NAD.= 14.46S 29.77E SWING= 327. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 4469.2 KM. SUN AZH= 83.0																
LAC 79 COLUMBO, NE ; LAC 78 THEOPHILUS ; LAC 96 ALTAI SCAR ; LAC 97 FRACASTORIUS, S. NECTAR ; LAC 60 J. CAESAR, SABINE																
L 4	1	83	42.95S	32.82E	16	***	163652	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2972K	4872131	98	5.1 23	-.00
CAM.NAD.= 42.23S 20.71E SWING= 297. PHASE= 80. EMIS.ANG.= 14. CAM.RAD.= 4711.2 KM. SUN AZH= 66.3																
LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 114 RHEITA, JA ; LAC 127 HOMMEL, VL ; LAC 128 BIELA, WA ; LAC 96 ALTAI ; LAC 97 FRACA																
L 4	1	84	15.19S	24.28E	16	***	170857	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2727K	4470492	124	.8 23	-.47
CAM.NAD.= 14.45S 23.18E SWING= 310. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 4466.2 KM. SUN AZH= 82.8																
EASTERN PART OF LAC 78 THEOPHILUS ; EASTERN PART OF LAC 96 ALTAI SCAR ; LAC 60 J. CAESAR, SABINE, JA & LAC 97 FRACASTORIUS,																
L 4	2	85	13.00N	23.94E	16	***	173950	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2717K	33962500	230	.9 24	-.27
CAM.NAD.= 13.89N 25.04E SWING= 44. PHASE= 65 EMIS.ANG.= 2. CAM.RAD.= 4456.2 KM. SUN AZH= 95.2																
DEGRADED NEGATIVE ; LAC 60 J. CAESAR, SABINE, JANSEN ; LAC 78 THEOPHILUS, KANT ; LAC 79 COLUMBO, NE, M																
L 4	1	88	42.70S	24.94E	17	***	043838	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2973K	4873770	96	4.6 22	-.00
CAM.NAD.= 42.26S 14.18E SWING= 295. PHASE= 80. EMIS.ANG.= 13. CAM.RAD.= 4712.2 KM. SUN AZH= 67.8																
LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 114 RHEITA, JA & EASTERN PART OF LAC 127 HOMMEL, VLACO																
L 4	1	89	15.09S	16.90E	17	***	051044	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2724K	4465574	154	.5 22	-.48
CAM.NAD.= 14.45S 16.59E SWING= 340. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 4463.2 KM. SUN AZH= 83.2																
WESTERN PART OF LAC 78 THEOPHILUS, KANT ; CENTRAL PART OF LAC 96 ALTAI SCAR & S. W. PART OF LAC 60 J. CAESAR, SABINE																
L 4	1	95	42.54S	18.70E	18	***	164033	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2976K	4878689	95	4.7 22	-.00
CAM.NAD.= 42.27S 7.64E SWING= 294. PHASE= 80. EMIS.ANG.= 13. CAM.RAD.= 4715.2 KM. SUN AZH= 67.9																
WESTERN PART OF LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 127 HOMMEL, VL & LAC 128 BIELA, WATT																
L 4	1	96	15.18S	10.67E	18	***	171241	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2722K	4462295	138	.6 22	-.46
CAM.NAD.= 14.45S 9.99E SWING= 324. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 4461.2 KM. SUN AZH= 83.2																
LAC 78 THEOPHILUS ; LAC 77 PTOLMAEUS ; LAC 95 PURBACH, AR ; LAC 96 ALTAI SCARP, GEBER ; LAC 59 M. VAPORUM, HYG																

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MIS STON	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LAT.	PT. #	URB #	GET TIMES-HR	GHI M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=N,M1 PT.	T I L T AZ ANG. ANG. FWD. FR. LAP VERT 8. 8	SUN SIDE, FWD.
L 4	1	100	42.72S	12.29E	19	***	044237	5-18-67	LUNAR ORB HI. 610MM B&W	-	NONE 2978K 4881967	96	4.8 21	-.00
CAM.NAD.= 42.26S 1.05E SWING= 295. PHASE= 81. EMIS.ANG.= 13. CAM.RAD.= 4717.2 KM. SUN AZM= 68.0														
WESTERN PART OF LAC 113 MAURULYCUS, RAB. LEVI														
L 4	1	101	15.19S	3.83E	19	***	051444	5-18-67	LUNAR ORB HI. 610MM B&W	-	NONE 2720K 4459016	150	.5 21	-.45
CAM.NAD.= 14.95S 3.38E SWING= 336. PHASE= 69. EMIS.ANG.= 1. CAM.RAD.= 4459.2 KM. SUN AZM= 83.4														
EASTERN PART OF LAC 77 PTOLMAEUS, ; EASTERN PART OF LAC 95 PURBACH, AR ; LAC 59 M.VAPORUM, HYGINUS ; LAC 96 ALTAI SCARP, G														
L 4	2	109	13.79N	3.58W	20	***	174732	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE 2693K 33662500	267	1.3 21	-.67
CAM.NAD.= 13.89N 1.48W SWING= 82. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4432.2 KM. SUN AZM= 94.7														
LAC 59 M.VAPORUM, HYGINUS ; W>1/2 MOON SPHERE ; LAC 12 PLATO, ALPINE VAL. ; LAC 61 TARUNTIUS, LY														
L 4	2	114	13.47N	10.97W	21	***	054938	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE 2687K 33587500	261	1.8 19	-.64
CAM.NAD.= 13.89N 8.09W SWING= 77. PHASE= 66. EMIS.ANG.= 5. CAM.RAD.= 4426.2 KM. SUN AZM= 94.2														
LAC 58 COPERNICUS, REINHOLD ; W>1/2 MOON SPHERE ; LAC 111 WILHELM, E ; LAC 12 PLATO, ALP ; LAC 26 EUDOX & LAC 96 ALTAI														
L 4	2	121	13.81N	16.80W	22	***	175143	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE 2682K 33525000	268	1.3 20	-.66
CAM.NAD.= 13.87N 14.69W SWING= 83. PHASE= 67. EMIS.ANG.= 3. CAM.RAD.= 4421.2 KM. SUN AZM= 94.4														
LAC 58 COPERNICUS, REINHOLD ; W>1/2 MOON SPHERE ; LAC 111 WILHELM, E ; LAC 96 ALTAI SCA ; LAC 11 J, HER & LAC 27 GEMIN														
L 5	1	54	27.74S	27.72E	30	***	204537	8-11-67	LUNAR ORB HI. 610MM B&W	-	NONE 133K 218033	227	57.8 10	-.00
CAM.NAD.= 22.62S 34.26E SWING= 111. PHASE= 34. EMIS.ANG.= 66. CAM.RAD.= 1872.2 KM. SUN AZM= 82.8														
S. E. PART OF LAC 96 ALTAI SCARP, GEBER ; S. Y. PART OF LAC 97 FRACASTORIUS, S. NECTAR														
L 5	2	54	27.72S	27.69E	30	***	204537	8-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE 133K 1662500	227	57.8 10	-.00
CAM.NAD.= 22.61S 34.26E SWING= 111. PHASE= 33. EMIS.ANG.= 66. CAM.RAD.= 1872.2 KM. SUN AZM= 82.8														
S. E. PART OF LAC 96 ALTAI SCA ; S. W. PART OF LAC 97 FRACASTORIUS, S. NECTAR ; LAC 113 MAURULYCUS, RAB. LEVI														
L 5	2	84	14.94S	13.90E	42	***	110058	8-13-67	LUNAR ORB LO.F=80MM B&W	-	NONE 115K 1437500	223	2.5 17	-.00
CAM.NAD.= 14.02S 14.02E SWING= 129. PHASE= 71. EMIS.ANG.= 3. CAM.RAD.= 1854.2 KM. SUN AZM= 83.7														
S. N. PART OF LAC 78 THEOPHILUS, KANT ; N. W. PART OF LAC 96 ALTAI SCARP, GEBER														

TOTAL PHOTOS IN THIS GROUP = 17

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (O) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOTGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T I L T	SUN	SIDE,	
SUN	ROLL	OR	LAT.				TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FAD.	
N	N	MAIN	LUNG.	(;=ESTIMATED)						TYPE		M=N.MI	PT.		FR.	LAP		
												K=KM.			VERT	S.	R	
L 3	2	78	10.275	20.51E	58	***	0000	104548	2-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	57K	712500	100	68.8	30	-..
CAM.NAD.= 4.745 26.54E SWING= 349. PHASE= 78. EMIS.ANG.= 74. CAM.RAD.= 1796.2 KM. SUN AZM= 85.7																		
EASTERN PART OF LAC 78 THEOPHILUS,KANT ; S. W. PART OF LAC 79 COLOMBO,NE & N. W. PART OF LAC 97 FRACASTORIUS																		
L 4	1	59	41.755	55.05E	12	***	0000	163122	5-14-67	LUNAR ORB HI. 610MM B&W	-	NONE	2975K	4877049	89	3.6	22	-..
CAM.NAD.= 42.145 46.79E SWING= 287. PHASE= 78. EMIS.ANG.= 10. CAM.RAD.= 4714.2 KM. SUN AZM= 68.5																		
LAC 114 RHEITA,JA ; LAC 115 FURNERIUS ; LAC 128 BIELA,WAT ; LAC 129 M.AUSTRALE,LYOT & LAC 98 PETAVIUS,HOLD																		
L 4	1	60	13.585	48.79E	12	***	0000	170326	5-14-67	LUNAR ORB HI. 610MM B&W	-	NONE	2738K	4484525	319	.7	23	-..
CAM.NAD.= 14.435 49.54E SWING= 145. PHASE= 66. EMIS.ANG.= 2. CAM.RAD.= 4477.2 KM. SUN AZM= 83.6																		
LAC 79 COLOMBO,NE,M.NECTAR ; LAC 80 LANGRENU,S.M.FERT. ; LAC 97 FRACASTORIUS,S.NECTAR & LAC 98 PETAVIUS,HOLD																		
L 4	1	64	42.565	50.55E	13	***	0000	043230	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	2973K	4873770	96	4.4	23	-..
CAM.NAD.= 42.145 40.27E SWING= 294. PHASE= 79. EMIS.ANG.= 12. CAM.RAD.= 4712.2 KM. SUN AZM= 67.0																		
LAC 114 RHEITA,JA ; LAC 115 FURNERIUS ; LAC 128 BIELA,WAT ; LAC 129 M.AUSTRALE,LYOT & LAC 97 FRACASTORIUS.																		
L 4	1	65	14.905	43.30E	13	***	0000	050433	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	2735K	4483607	143	.4	24	-..
CAM.NAD.= 14.445 42.95E SWING= 329. PHASE= 67. EMIS.ANG.= 1. CAM.RAD.= 4474.2 KM. SUN AZM= 82.8																		
EASTERN PART OF LAC 79 COLOMBO,NE ; EASTERN PART OF LAC 97 FRACASTORIUS,S.NECTAR & LAC 61 TARUNTIUS,LYELL																		
L 4	1	71	43.695	46.67E	14	***	0000	163344	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	2972K	4872131	103	5.5	24	-..
CAM.NAD.= 42.225 33.74E SWING= 301. PHASE= 80. EMIS.ANG.= 15. CAM.RAD.= 4711.2 KM. SUN AZM= 64.7																		
LAC 114 RHEITA,JA ; LAC 115 FURNERIUS ; LAC 128 BIELA,WAT ; LAC 129 M.AUSTRALE,LYOT & LAC 97 FRACASTORIUS.																		
L 4	1	72	15.775	37.86E	14	***	0000	170548	5-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	2732K	4478689	131	1.2	24	-..
CAM.NAD.= 14.505 36.35E SWING= 316. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4471.2 KM. SUN AZM= 82.2																		
WESTERN PART OF LAC 79 COLOMBO,NE ; CENTRAL PART OF LAC 97 FRACASTORIUS,S.NECTAR & LAC 61 TARUNTIUS,LYELL																		
L 4	1	76	42.775	37.87E	15	***	0000	043514	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2972K	4872131	97	4.5	22	-..
CAM.NAD.= 42.215 27.23E SWING= 296. PHASE= 79. EMIS.ANG.= 12. CAM.RAD.= 4711.2 KM. SUN AZM= 67.2																		
LAC 114 RHEITA,JA,NSSEN ; LAC 113 MAURULYCUS,RAB.LEVI ; LAC 127 HOMMEL,VLACO & LAC 128 BIELA,WAT																		
L 4	1	77	14.935	30.15E	15	***	0000	050718	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2730K	4475410	141	.4	23	-..
CAM.NAD.= 14.465 29.77E SWING= 327. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 4469.2 KM. SUN AZM= 83.0																		
LAC 79 COLOMBO,NE ; LAC 78 THEOPHILUS ; LAC 96 ALTAI SCAR ; LAC 97 FRACASTORIUS,S.NECTAR & LAC 60 J.CAESAR,SARI																		

MIS SION	MAG ROLL	FR. PHOTO UN	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HH M SEC (ESTIMATED)	GMT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE M-N.MI K-KM.	SCALE AT PRIN. PT.	T AZ	L ANG.	T ANG.	SUN SIDE, FR. VERT	STDE. FWD. LAP R. X
L 4	1	83	42.45S	32.82E	16 ***	163652	5-16-67 LUNAR ORB HI. 610MM B&W	-	NONE	2972K	4472131	98	5.1	23	-.00
CAM-NAD.= 42.23S 20.71E SWING= 297. PHASE= 80. EMIS-ANG.= 14. CAM-RAD.= 4711.2 KM. SUN AZM= 66.3															
LAC 113 MAURULYCUS, RAB. LEVI ; LAC 114 RHEITA, JA ; LAC 127 HOMMEL, VL ; LAC 128 BIELA, WA ; LAC 96 ALTAI & LAC 97 FRACA															
L 4	1	84	15.19S	24.28E	16 ***	170857	5-16-67 LUNAR ORB HI. 610MM B&W	-	NONE	2727K	4470492	124	.8	23	-.47
CAM-NAD.= 14.45S 23.18E SWING= 310. PHASE= 68. EMIS-ANG.= 2. CAM-RAD.= 4466.2 KM. SUN AZM= 82.8															
EASTERN PART OF LAC 78 THEOPHILUS ; EASTERN PART OF LAC 96 ALTAI SCAR ; LAC 60 J. CAESAR, SABINE, JA & LAC 97 FRACASTORIUS,															
L 4	2	85S	13.00N	23.94E	16 ***	173950	5-16-67 LUNAR ORB LU, F=80MM B&W	-	NONE	2717K	33962500	230	.9	24	-.27
CAM-NAD.= 13.89N 25.04E SWING= 44. PHASE= 35. EMIS-ANG.= 2. CAM-RAD.= 4456.2 KM. SUN AZM= 95.2															
DEGRADED NEGATIVE ; LAC 60 J. CAESAR, SABINE, JANSEN ; LAC 78 THEOPHILUS, KANT & LAC 79 COLOMBO, NE, M															
L 4	2	90S	13.75N	15.87E	17 ***	054135	5-17-67 LUNAR ORB LU, F=80MM B&W	-	NONE	2711K	33887500	267	1.6	22	-.71
CAM-NAD.= 13.89N 18.39E SWING= 82. PHASE= 64. EMIS-ANG.= 4. CAM-RAD.= 4450.2 KM. SUN AZM= 95.0															
LAC 60 J. CAESAR, SABINE, JANSEN ; >1/2 MOON SPHERE ; LAC 26 EUDOXUS, RU ; LAC 95 PURBACH, ARZACHEL & LAC 97 FRACASTORI															
L 4	2	178S	33.08S	62.20E	32 ***	132433	5-24-67 LUNAR ORB LU, F=80MM B&W	-	NONE	5796K	72449999	264	5.3	2	-.00
CAM-NAD.= 33.98S 104.14E SWING= 275. PHASE= 112. EMIS-ANG.= 23. CAM-RAD.= 7535.2 KM. SUN AZM= 271.9															
LAC 116 H. AUSTRAL, JENNER ; >1/2 MOON SPHERE ; LAC 97 FRACASTORIUS, S. NE ; LAC 131 PRANDTL PLANK & LAC 45 PLUTARCH, H															
L 5	2	40	31.28S	51.94E	20 ***	125148	8-10-67 LUNAR ORB LU, F=80MM B&W	-	NONE	164K	20500000	110	10.3	17	-.00
CAM-NAD.= 30.93S 50.87E SWING= 16. PHASE= 83. EMIS-ANG.= 11. CAM-RAD.= 1903.2 KM. SUN AZM= 77.7															
S. W. PART OF LAC 98 PETAVIUS, HOLDEN ; S. E. PART OF LAC 97 FRACASTORIUS, S. NE & N. E. PART OF LAC 114 RHEITA, JANSEN															
L 5	1	54	27.74S	27.72E	30 ***	204537	8-11-67 LUNAR ORB HI. 610MM B&W	-	NONE	133K	218033	227	57.8	10	-.00
CAM-NAD.= 22.62S 34.26E SWING= 111. PHASE= 34. EMIS-ANG.= 66. CAM-RAD.= 1872.2 KM. SUN AZM= 82.8															
S. E. PART OF LAC 96 ALTAI SCAR, GEBER & S. W. PART OF LAC 97 FRACASTORIUS, S. NECTAR															
L 5	2	54	27.72S	27.69E	30 ***	204537	8-11-67 LUNAR ORB LU, F=80MM B&W	-	NONE	133K	1662500	227	57.8	10	-.00
CAM-NAD.= 22.61S 34.26E SWING= 111. PHASE= 33. EMIS-ANG.= 66. CAM-RAD.= 1872.2 KM. SUN AZM= 82.8															
S. E. PART OF LAC 96 ALTAI SCAR ; S. W. PART OF LAC 97 FRACASTORIUS, S. NECTAR & LAC 113 MAURULYCUS, RAB. LEVI															

TOTAL PHOTOS IN THIS GROUP = 17



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (O) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUN= MAUNER; 2P, 2H, 2S = ZEISS LENS; PLANAR, BIOGEN, SONAR; FOCAL LENGTH(MM) & MAX.F-OPENING  
 IS = AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

SUN	HAG	FR.	PHOTO	PRIN.PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE		SCALE AT		TILT		SUN SIDE,	
											PRIN.	PT.	M=N.M	K=KM.	AZ	ANG.		ANG.
#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
L 4	1	38	42.645	77.77E	9	00	0000	042846	5-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2982K	4888525	98	4.8	24	-0.00	
CAM.NAD.= 42.025 66.45E SWING= 295. PHASE= 78. EMIS.ANG.= 13. CAM.RAD.= 4721.2 KM. SUN AZH= 64.8																		
EASTERN PART OF LAC 115 FURNERIUS; LAC 129 M.AUSTRALE; LAC 116 M.AUSTRAL; LAC 99 HUMBOLT, GIBBS & LAC 98 PETAVIUS.																		
L 4	1	39	14.90S	69.88E	9	00	0000	050052	5-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2745K	4500000	135	.5	26	-0.45	
CAM.NAD.= 14.39S 69.36E SWING= 320. PHASE= 65. EMIS.ANG.= 1. CAM.RAD.= 4484.2 KM. SUN AZH= 82.2																		
LAC 80 LANGRENUS; LAC 81 ANSGARIUS; LAC 98 PETAVIUS, H; LAC 99 HUMBOLT, GIBBS & LAC 62 M.UNDARUM, S.C																		
L 4	1	45	42.42S	71.80E	10	00	0000	162932	5-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2979K	4883607	98	5.1	25	-0.00	
CAM.NAD.= 42.64S 59.88E SWING= 293. PHASE= 74. EMIS.ANG.= 14. CAM.RAD.= 4718.2 KM. SUN AZH= 64.7																		
LAC 115 FURNERIUS; LAC 129 M.AUSTRALE, LYOT & S. E. PART OF LAC 98 PETAVIUS, HOLDEN																		
L 4	1	46	14.81S	63.41E	10	00	0000	170137	5-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2743K	4496721	122	.5	26	-0.39	
CAM.NAD.= 14.40S 62.75E SWING= 307. PHASE= 65. EMIS.ANG.= 1. CAM.RAD.= 4482.2 KM. SUN AZH= 82.3																		
EASTERN PART OF LAC 80 LANGRENUS, M.FERT. & SOUTHERN PART OF LAC 62 M.UNDARUM, S.																		
L 4	1	52	42.91S	63.81E	11	00	0000	043024	5-14-67 LUNAR ORB HI. 610MM B&W	-	NONE	2976K	4878609	99	4.5	23	-0.00	
CAM.NAD.= 42.06S 53.33E SWING= 297. PHASE= 78. EMIS.ANG.= 12. CAM.RAD.= 4715.2 KM. SUN AZH= 66.0																		
LAC 115 FURNERIUS, UKEN; LAC 128 BIELA, WAT & SOUTHERN PART OF LAC 98 PETAVIUS, H																		
L 4	1	53	14.82S	56.82E	11	00	0000	050229	5-14-67 LUNAR ORB HI. 610MM B&W	-	NONE	2740K	4491803	122	.5	25	-0.51	
CAM.NAD.= 14.41S 56.14E SWING= 308. PHASE= 66. EMIS.ANG.= 1. CAM.RAD.= 4479.2 KM. SUN AZH= 82.4																		
WESTERN PART OF LAC 80 LANGRENUS, M.FERT. & S. W. PART OF LAC 62 M.UNDARUM, S.																		
L 4	1	59	41.75S	55.05E	12	00	0000	163122	5-14-67 LUNAR ORB HI. 610MM B&W	-	NONE	2975K	4877049	89	3.6	22	-0.00	
CAM.NAD.= 42.11S 46.79E SWING= 287. PHASE= 78. EMIS.ANG.= 10. CAM.RAD.= 4714.2 KM. SUN AZH= 68.5																		
LAC 114 RHEITA, JA; LAC 115 FURNERIUS; LAC 128 BIELA, WAT; LAC 129 M.AUSTRAL, LYOT & LAC 98 PETAVIUS, HOLD																		
L 4	1	60	13.58S	48.79E	12	00	0000	170326	5-14-67 LUNAR ORB HI. 610MM B&W	-	NONE	2738K	4488525	119	.7	23	-0.51	
CAM.NAD.= 14.43S 49.54E SWING= 145. PHASE= 66. EMIS.ANG.= 2. CAM.RAD.= 4477.2 KM. SUN AZH= 83.6																		
LAC 79 COLUMBU, NE.M. NECTAR; LAC 80 LANGRENUS, M.FERT. & LAC 97 FRACASTORIUS, S. NECTAR & LAC 98 PETAVIUS, HOL																		
L 4	1	64	42.56S	50.55E	13	00	0000	043230	5-15-67 LUNAR ORB HI. 610MM B&W	-	NONE	2973K	4873770	96	4.4	23	-0.00	
CAM.NAD.= 42.14S 40.27E SWING= 294. PHASE= 79. EMIS.ANG.= 12. CAM.RAD.= 4712.2 KM. SUN AZH= 67.0																		
LAC 114 RHEITA, JA; LAC 115 FURNERIUS; LAC 128 BIELA, WAT; LAC 129 M.AUSTRAL, LYOT & LAC 97 FRACASTORIUS.																		

MIS SION	MAG #	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE PRIN. M=N, MI K=KM.	AT PT.	T I L T AZ	SUN ANG.	SIDE, ANG. FR. VERT	FWD, LAP S. R
L 4	2	165	38.83N	81.13E	29	***	094351	5-23-67	LUNAR	ORB LO.F=80MM B&W	- NONE	5487K	68587499	290	7.6	14	-.**	
CAM.NAD.= 33.96N 112.70E SWING= 282. PHASE= 107. EMIS.ANG.= 33. CAM.RAD.= 7226.2 KM. SUN AZM=259.4																		
LAC 28 GAUSS, NESS : W1/4 MOON SPHERE : LAC 98 PETAVIUS, H : LAC 4 METON, DESITTER G LAC 1 N. POLE NEARSID																		
L 4	2	1915	38.29N	53.79E	33	***	094706	5-25-67	LUNAR	ORB LO.F=80MM B&W	- NONE	5503K	68787499	288	7.0	16	-.**	
CAM.NAD.= 33.95N 86.05E SWING= 282. PHASE= 107. EMIS.ANG.= 34. CAM.RAD.= 7242.2 KM. SUN AZM=257.6																		
DEGRADED NEGATIVE : LAC 27 GEMINUS, AT : >1/2 MOON SPHERE : LAC 98 PETAVIUS, HOLDEN G LAC 26 EUDOXUS, BURG																		
L 5	1	33	25.97S	60.54E	15	***	205743	8-09-67	LUNAR	ORB HI. 610MM B&W	- NONE	145K	237705	135	5.4	18	-.**	
CAM.NAD.= 25.64S 60.19E SWING= 41. PHASE= 75. EMIS.ANG.= 6. CAM.RAD.= 1884.2 KM. SUN AZM= 79.1																		
CENTRAL PART OF LAC 98 PETAVIUS, HOLDEN																		
L 5	2	33	25.96S	60.53E	15	***	205743	8-09-67	LUNAR	ORB LO.F=80MM B&W	- NONE	145K	1812500	136	5.3	18	-.**	
CAM.NAD.= 25.63S 60.19E SWING= 41. PHASE= 75. EMIS.ANG.= 6. CAM.RAD.= 1884.2 KM. SUN AZM= 79.1																		
CENTRAL PART OF LAC 98 PETAVIUS, HOLDEN																		
L 5	1	34	25.57S	60.58E	15	***	205750	8-09-67	LUNAR	ORB HI. 610MM B&W	- NONE	144K	236966	132	5.2	18	-. 8	
CAM.NAD.= 25.28S 60.23E SWING= 38. PHASE= 75. EMIS.ANG.= 6. CAM.RAD.= 1883.2 KM. SUN AZM= 79.2																		
CENTRAL PART OF LAC 98 PETAVIUS, HOLDEN																		
L 5	2	34	25.56S	60.57E	15	***	205750	8-09-67	LUNAR	ORB LO.F=80MM B&W	- NONE	144K	1800000	133	5.1	18	-.88	
CAM.NAD.= 25.27S 60.23E SWING= 38. PHASE= 75. EMIS.ANG.= 5. CAM.RAD.= 1883.2 KM. SUN AZM= 79.2																		
CENTRAL PART OF LAC 98 PETAVIUS, HOLDEN																		
L 5	1	35	25.18S	60.62E	15	***	205756	8-09-67	LUNAR	ORB HI. 610MM B&W	- NONE	143K	234426	129	5.0	18	-. 8	
CAM.NAD.= 24.92S 60.27E SWING= 34. PHASE= 75. EMIS.ANG.= 5. CAM.RAD.= 1882.2 KM. SUN AZM= 79.3																		
CENTRAL PART OF LAC 98 PETAVIUS, HOLDEN																		
L 5	2	35	25.17S	60.61E	15	***	205757	8-09-67	LUNAR	ORB LO.F=80MM B&W	- NONE	143K	1787500	129	4.9	18	-.88	
CAM.NAD.= 24.91S 60.27E SWING= 35. PHASE= 75. EMIS.ANG.= 5. CAM.RAD.= 1882.2 KM. SUN AZM= 79.3																		
CENTRAL PART OF LAC 98 PETAVIUS, HOLDEN																		
L 5	1	36	24.79S	60.66E	15	***	205803	8-09-67	LUNAR	ORB HI. 610MM B&W	- NONE	142K	237787	125	4.8	18	-. 9	
CAM.NAD.= 24.56S 60.30E SWING= 31. PHASE= 75. EMIS.ANG.= 5. CAM.RAD.= 1881.2 KM. SUN AZM= 79.4																		
CENTRAL PART OF LAC 98 PETAVIUS, HOLDEN																		
L 5	2	36	24.78S	60.65E	15	***	205803	8-09-67	LUNAR	ORB LO.F=80MM B&W	- NONE	142K	1775000	126	4.7	18	-.88	
CAM.NAD.= 24.56S 60.31E SWING= 31. PHASE= 75. EMIS.ANG.= 5. CAM.RAD.= 1881.2 KM. SUN AZM= 79.4																		
CENTRAL PART OF LAC 98 PETAVIUS, HOLDEN																		
L 5	1	37	18.95S	57.14E	17	***	032204	8-10-67	LUNAR	ORB HI. 610MM B&W	- NONE	125K	204918	246	3.6	19	-.**	
CAM.NAD.= 18.85S 57.39E SWING= 151. PHASE= 67. EMIS.ANG.= 4. CAM.RAD.= 1864.2 KM. SUN AZM= 81.5																		
N. W. PART OF LAC 98 PETAVIUS, HOLDEN																		
L 5	2	37	18.94S	57.13E	17	***	032204	8-10-67	LUNAR	ORB LO.F=80MM B&W	- NONE	125K	1562500	247	3.7	19	-.**	
CAM.NAD.= 18.84S 57.39E SWING= 152. PHASE= 67. EMIS.ANG.= 4. CAM.RAD.= 1864.2 KM. SUN AZM= 81.5																		
N. W. PART OF LAC 98 PETAVIUS, HOLDEN																		

MIS SION	MAG ROLL	FR, PHOTO OR LAT.	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN.	TILT A7 ANG.	SUN SIDE, ANG. FWD.
#	#	MAIN	LONG.		(ESTIMATED)					M=N.MI K=KM.	PT. VERT	FR. VERT
L 5 1	40	31.295	51.96E	20	***	***	125148	8-10-67 LUNAR ORB HI. 610MM B&W	- NONE	164K	268852	110 10.5 17 -...
CAM*RAD* = 30.945 50.87E SWING = 16. PHASE = 83. EMIS*ANG. = 11. CAM*RAD* = 1903.2 KM. SUN AZM = 77.7												
S. W. PART OF LAC 98 PETAVIUS, HOLDEN												
L 5 2	40	31.285	51.94E	20	***	***	125148	8-10-67 LUNAR ORB LO. F=80MM B&W	- NONE	164K	2050000	110 10.3 17 -...
CAM*RAD* = 30.935 50.87E SWING = 16. PHASE = 83. EMIS*ANG. = 11. CAM*RAD* = 1903.2 KM. SUN AZM = 77.7												
S. W. PART OF LAC 98 PETAVIUS, HOLDEN 1 S. E. PART OF LAC 97 FRACASTORIUS, S.W. 6 N. E. PART OF LAC 114 RHEITA, JANSSEN												

TOTAL PHOTOS IN THIS GROUP = 23

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-1,1,0), (1,1,0), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTAR = EKTAR 2.8 LENS;  
H.S.B. = HASSELBLAD; MAUR. = MAUER; 2P, 2B, 2S = ZEISS LENS (PLANAR, BIOGEN, SONAR); FOCAL LENGTH (MM) & MAX. F-OPENING  
10\* AS EXPOS. SPEED = 1/1000 (OR \*\* TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

HIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	TILT	SUN	SIDE,
SIGN	HULL	OR	LAT.	LONG.	"	TIMES-HH M SEC	(=ESTIMATED)			SENSOR	AND FILTER	TUDE	PRIN.	A7	ANG.	ANG.	FWD.
"	"	MAIN								TYPE		M=N.HI	PT.		FR.	LAP	
		"										K*KH.			VERT	Z. R	
L 4	1	9	41.79S	96.20E	6	000 0000	162638	5-11-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2989K	49000000	91	4.2 25	-..*
CAM.NAD.= 42.02S 86.28E SWING= 289. PHASE= 76. EMIS.ANG.= 12. CAM.RAD.= 4728.2 KM. SUN AZM= 65.1																	
LAC 116 M.AUSTRIAL; LAC 99 HUMBOLT,GI; LAC 100 CURIE; LAC 129 M.AUSTRALE,LYOT; LAC 130 E.MAR AUSTRA																	
L 4	1	10	41.42S	96.19E	6	000 0000	162648	5-11-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2987K	4896721	89	4.3 25	-.90
CAM.NAD.= 41.88S 86.30E SWING= 287. PHASE= 76. EMIS.ANG.= 12. CAM.RAD.= 4726.2 KM. SUN AZM= 65.2																	
LAC 116 M.AUSTRIAL; LAC 99 HUMBOLT,GI; LAC 100 CURIE; LAC 129 M.AUSTRALE,LYOT; LAC 130 E.MAR AUSTRA																	
L 4	1	11	41.04S	96.19E	6	000 0000	162658	5-11-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2986K	4895082	87	4.3 25	-.90
CAM.NAD.= 41.74S 86.32E SWING= 285. PHASE= 76. EMIS.ANG.= 12. CAM.RAD.= 4725.2 KM. SUN AZM= 65.4																	
LAC 116 M.AUSTRIAL; LAC 99 HUMBOLT,GI; LAC 100 CURIE; LAC 129 M.AUSTRALE,LYOT; LAC 130 E.MAR AUSTRA																	
L 4	1	12	40.67S	96.18E	6	000 0000	162708	5-11-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2984K	4891803	86	4.3 25	-.90
CAM.NAD.= 41.61S 86.34E SWING= 283. PHASE= 76. EMIS.ANG.= 12. CAM.RAD.= 4723.2 KM. SUN AZM= 65.6																	
LAC 116 M.AUSTRIAL; LAC 99 HUMBOLT,GI; LAC 100 CURIE; LAC 129 M.AUSTRALE,LYOT; LAC 130 E.MAR AUSTRA																	
L 4	1	27	15.22S	82.67E	7	000 0000	045932	5-12-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2747K	4503279	175	4.6 26	-.44
CAM.NAD.= 14.35S 82.59E SWING= 0. PHASE= 64. EMIS.ANG.= 1. CAM.RAD.= 4486.2 KM. SUN AZM= 81.9																	
CENTRAL PART OF LAC 81 ANSGARIUS; EASTERN PART OF LAC 99 HUMBOLT,GI; LAC 63 NEPER,SCHURERT,N.5 6 LAC 115 FURNERIU,OK																	
L 4	1	33	41.84S	84.13E	8	000 0000	162801	5-12-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2985K	4893443	92	4.7 25	-.00
CAM.NAD.= 42.02S 73.04E SWING= 289. PHASE= 77. EMIS.ANG.= 13. CAM.RAD.= 4724.2 KM. SUN AZM= 64.9																	
DEGRADED NEGATIVE; LAC 116 M.AUSTRALE,JENN; SOUTHERN PART OF LAC 99 HUMBOLT,GI & EASTERN PART OF LAC 129 M.AUSTRALE																	
L 4	1	34	14.71S	76.59E	8	000 0000	170009	5-12-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2746K	4501619	116	4.4 26	-.43
CAM.NAD.= 14.41S 75.97E SWING= 302. PHASE= 64. EMIS.ANG.= 1. CAM.RAD.= 4485.2 KM. SUN AZM= 82.1																	
DEGRADED NEGATIVE; LAC 81 ANSGARIUS,N.M.SH; WESTERN PART OF LAC 99 HUMBOLT,GI & SOUTHERN PART OF LAC 63 NEPER,SCHUB																	
L 4	1	38	42.64S	77.77E	9	000 0000	042846	5-13-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2982K	4888525	98	4.8 24	-.00
CAM.NAD.= 42.02S 66.45E SWING= 295. PHASE= 78. EMIS.ANG.= 13. CAM.RAD.= 4721.2 KM. SUN AZM= 64.8																	
EASTERN PART OF LAC 115 FURNERIU,; LAC 129 M.AUSTRALE; LAC 116 M.AUSTRIAL; LAC 99 HUMBOLT,GI & LAC 98 PETAVIU,.																	
L 4	1	39	14.90S	69.88E	9	000 0000	050052	5-13-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2745K	4500000	135	4.5 26	-.45
CAM.NAD.= 14.39S 69.36E SWING= 320. PHASE= 65. EMIS.ANG.= 1. CAM.RAD.= 4484.2 KM. SUN AZM= 82.2																	
LAC 80 LANGERUS; LAC 81 ANSGARIUS; LAC 98 PETAVIU,M; LAC 99 HUMBOLT,GI & LAC 62 M.UNDARUM,S.C																	

HIS SION	RAG ROLL	FR, PHOTO UN	PRIN. PT. LAT.	UMB N	GET TIMES-HR M SEC	GMT (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN.	T I L T A7	SUN SIDE, ANG.	SIDE, ANG.	FWD, LAP	
																MAIN N
L 4	1	45° 42.425	71.80E	10	***	0000	162932	S-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2979K	4883607	96	5.1	25	***
CAM. RAD. = 42.045 59.88E SWING = 273. PHASE = 78. EMIS. ANG. = 14. CAM. RAD. = 4716.2 KM. SUN AZM = 64.7																
LAC 115 FURNERUS ; LAC 129 M. AUSTRALIS, LYOT 6 S. E. PART OF LAC 98 PETAVIUS, HOLDEN																
L 4	2	165 38.83N	81.13E	29	***	0000	094351	S-23-67 LUNAR ORB LO. F=80MM B&W	-	NONE	5487K	68507499	290	7.6	14	***
CAM. RAD. = 33.96N 112.70E SWING = 282. PHASE = 109. EMIS. ANG. = 33. CAM. RAD. = 7226.2 KM. SUN AZM = 259.4																
LAC 28 GAUSS, MESS ; 1/4 MOON SPHERE ; LAC 98 PETAVIUS, H ; LAC 4 METON, DFSITTER 6 LAC ; N. POLE NEAR SID																
L 4	2	177° 38.81N	67.86E	31	***	0000	094529	S-24-67 LUNAR ORB LO. F=80MM B&W	-	NONE	5492K	68649999	290	7.6	15	***
CAM. RAD. = 33.96N 99.33E SWING = 282. PHASE = 108. EMIS. ANG. = 33. CAM. RAD. = 7231.2 KM. SUN AZM = 258.7																
LAC 28 GAUSS, MESSALA, ZENH ; 1/2 MOON SPHERE ; LAC 61 TARUNTIUS, LYELL ; LAC 99 HUMBOLT, GIBBS 6 LAC 5 PETERMANN.																
L 4	1	178 33.875	102.21E	32	***	0000	132933	S-24-67 LUNAR ORB HI. 610MM B&W	-	NONE	5796K	9501639	264	5.3	2	***
CAM. RAD. = 33.98S 104.14E SWING = 275. PHASE = 112. EMIS. ANG. = 23. CAM. RAD. = 7535.2 KM. SUN AZM = 271.9																
LAC 116 M. AUSTRALIS, JENNER ; 1/4 MOON SPHERE ; LAC 63 NEPER, SCHUBERT, N. SMYTHI 6 LAC 99 HUMBOLT, GIBBS																

TOTAL PHOTOS IN THIS GROUP = 13

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,HIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 1/1000 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT U.O

MIS	MAG	FR. PHOTO	PRIN. PT.	UMB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT SCALE AT	TILT	SUN SIDE,								
SION NULL	OR	LAT.	"	"	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ								
"	"	MAIN	LONG.	"	(ESTIMATED)	"		TYPE		M=M.MI	PT.	FR.								
		"								K=KM.		VERT								
												ANG. ANG. FWD.								
												LAP								
												% R								
L 1	1	102	14.68S	104.34E	60	00.0000	163624	8-23-66	LUNAR ORB HI. 610MM B&W	-	NONE	1198K	1963934	258	35.8	69	-..			
			CAM.NAD.=	9.76S	150.37E		SWING= 254.	PHASE= 95.	EMIS.ANG.= 81.		CAM.RAD.=	2937.2 KM.			SUN AZM=318.3					
EASTERN PART OF LAC 82 SE.M.SMYTHI; LUNAR DISC FAR SIDE; LAC 83 LANGEMAK; LAC 101 TSIOLKOVSKY													6	LAC 100 CURIE						
L 1	2	102	14.68S	104.35E	60	00.0000	163624	8-23-66	LUNAR ORB LO.F=80MM B&W	-	NONE	1198K	14975000	258	35.7	69	-..			
			CAM.NAD.=	9.76S	150.38E		SWING= 254.	PHASE= 95.	EMIS.ANG.= 81.		CAM.RAD.=	2937.2 KM.			SUN AZM=318.3					
LAC 82 SE.M.SMYTHI; LUNAR DISC FAR SIDE; LAC 101 TSIOLKOVSKY; LAC 83 LANGEMAK													6	LAC 117 VAN DER MAAL						
L 2	1	196	8.84S	100.56E	97	00.0000	045805	11-25-66	LUNAR ORB HI. 610MM B&W	-	NONE	1519K	2490144	236	2.2	20	-..			
			CAM.NAD.=	8.77S	100.68E		SWING= 234.	PHASE= 70.	EMIS.ANG.= 0.		CAM.RAD.=	3258.2 KM.			SUN AZM=272.8					
CENTRAL PART OF LAC 82 SE.M.SMYTHI, PASTEUR													1	NORTHERN PART OF LAC 100 CURIE			6	SOUTHERN PART OF LAC 64 NE.SMYTHI H		
L 3	1	373	20.45S	102.92E	47	00.0000	204953	2-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	396K	649180	230	5.2	71	-..			
			CAM.NAD.=	19.76S	103.89E		SWING= 149.	PHASE= 15.	EMIS.ANG.= 6.		CAM.RAD.=	2135.2 KM.			SUN AZM= 7.4					
DEGRADED NEGATIVE													6	N. E. PART OF LAC 100 CURIE						
L 3	2	121	24.26S	126.78E	74	00.0000	192200	2-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1463K	18287500	181	12.8	20	-..			
			CAM.NAD.=	12.92S	127.09E		SWING= 184.	PHASE= 70.	EMIS.ANG.= 24.		CAM.RAD.=	3202.2 KM.			SUN AZM=277.4					
LAC 101 TSIOLKOVSKY; 61/4 MOONS SPHERE; LAC 83 LANGEMAK; LAC 84 DELLINGER													6	LAC 100 CURIE						
L 4	1	9	41.79S	96.20E	6	00.0000	162638	5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2989K	4900000	91	4.2	25	-..			
			CAM.NAD.=	42.02S	86.28E		SWING= 289.	PHASE= 76.	EMIS.ANG.= 12.		CAM.RAD.=	4728.2 KM.			SUN AZM= 65.1					
LAC 116 M.AUSTRIAL; LAC 99 HUMBOLDT, GI; LAC 100 CURIE													1	LAC 129 M.AUSTRAL, LYOT			6	LAC 130 E.MAR AUSTRAL		
L 4	1	10	41.42S	96.19E	6	00.0000	162648	5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2987K	4894771	89	4.3	25	-..			
			CAM.NAD.=	41.88S	86.30E		SWING= 287.	PHASE= 76.	EMIS.ANG.= 12.		CAM.RAD.=	4726.2 KM.			SUN AZM= 65.2					
LAC 116 M.AUSTRIAL; LAC 99 HUMBOLDT, GI; LAC 100 CURIE													1	LAC 129 M.AUSTRAL, LYOT			6	LAC 130 F.MAR AUSTRAL		
L 4	1	11	41.64S	96.19E	6	00.0000	162658	5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2986K	4895002	87	4.3	25	-..			
			CAM.NAD.=	41.74S	86.32E		SWING= 285.	PHASE= 76.	EMIS.ANG.= 12.		CAM.RAD.=	4725.2 KM.			SUN AZM= 65.4					
LAC 116 M.AUSTRIAL; LAC 99 HUMBOLDT, GI; LAC 100 CURIE													1	LAC 129 M.AUSTRAL, LYOT			6	LAC 130 E.MAR AUSTRAL		
L 4	1	12	40.67S	96.18E	6	00.0000	162708	5-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	2984K	4891803	86	4.3	25	-..			
			CAM.NAD.=	41.61S	86.34E		SWING= 283.	PHASE= 76.	EMIS.ANG.= 12.		CAM.RAD.=	4723.2 KM.			SUN AZM= 65.6					
LAC 116 M.AUSTRIAL; LAC 99 HUMBOLDT, GI; LAC 100 CURIE													1	LAC 129 M.AUSTRAL, LYOT			6	LAC 130 E.MAR AUSTRAL		

100

LAC 100 CURIE

HIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE.			
SIGN ROLL	OR	LAT.	"	TIMES-HR M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
"	"	MAIN	LONG.	(I=ESTIMATED)				TYPE		M=N.MI	PT.	FR.	VERT	LAP	B. 9
										K=KM.					

TOTAL PHOTOS IN THIS GROUP = 9

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENSPLANAR,BIOGEN,SONAR; FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR,PHOTO OR	PRIN.PT. LAT.	ORB LUNG.	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. PT.	TILT AZ	SUN ANG.	SIDE ANG.	FWD. LAP R. S
L 1	1	102	14.68S 104.34E	60 ***	163624	8-23-66	LUNAR ORB HI. 610MM B&W	-	NONE	1198K	1963934	258	35.8	69	-. **
CAM.NAD.= 9.76S 150.37E SWING= 254. PHASE= 95. EMIS.ANG.= 81. CAM.RAD.= 2937.2 KM. SUN AZM=318.3 EASTERN PART OF LAC 82 SE.M.SMYTHI; LUNAR DISC FAR SIDE; LAC 83 LANGEMAK; LAC 101 TSIOLKOVSKY & LAC 100 CURIE															
L 1	2	102	14.68S 104.35E	60 ***	163624	8-23-66	LUNAR ORB LO.F=80MM B&W	-	NONE	1198K	14975000	258	35.7	69	-. **
CAM.NAD.= 9.76S 150.38E SWING= 254. PHASE= 95. EMIS.ANG.= 81. CAM.RAD.= 2937.2 KM. SUN AZM=318.3 LAC 82 SE.M.SMYTHI; LUNAR DISC FAR SIDE; LAC 101 TSIOLKOVSKY; LAC 83 LANGEMAK & LAC 117 VAN DER WAAL															
L 1	2	117	5.21S 95.31E	71 ***	071501	8-25-66	LUNAR ORB LO.F=80MM B&W	-	NONE	1581K	19767500	267	32.8	65	-. **
CAM.NAD.= 6.07S 152.84E SWING= 265. PHASE= 115. EMIS.ANG.= 90. CAM.RAD.= 3120.2 KM. SUN AZM=284.7 PRIN.PT. IN SPACE; LUNAR DISC FAR SIDE; LAC 101 TSIOLKOVSKY; LAC 84 DELLINGER & LAC 66 MENDELEEV															
L 1	2	136	5.40S 129.33E	77 ***	034836	8-26-66	LUNAR ORB LO.F=80MM B&W	-	NONE	1328K	16600000	359	3.5	21	-. **
CAM.NAD.= 8.11S 129.35E SWING= 354. PHASE= 70. EMIS.ANG.= 6. CAM.RAD.= 3067.2 KM. SUN AZM=273.7 LAC 83 LANGEMAK; LAC 84 DELLINGER; LAC 101 TSIOLKOVSKY; LAC 102 GAGARIN.E.TSIOLKOVSKY & LAC 65 GUYOT KING															
L 3	1	121	24.15S 126.59E	74 ***	192200	2-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	1463K	2398361	182	12.7	20	-. **
CAM.NAD.= 12.92S 127.09E SWING= 184. PHASE= 70. EMIS.ANG.= 24. CAM.RAD.= 3202.2 KM. SUN AZM=277.5 EASTERN PART OF LAC 101 TSIOLKOVSKY; S. E. PART OF LAC 83 LANGEMAK & N. E. PART OF LAC 117 VAN DER WAAL															
L 3	2	121	24.20S 126.68E	74 ***	192200	2-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1463K	18287500	181	12.8	20	-. **
CAM.NAD.= 12.92S 127.09E SWING= 184. PHASE= 70. EMIS.ANG.= 24. CAM.RAD.= 3202.2 KM. SUN AZM=277.4 LAC 101 TSIOLKOVSKY; W1/4 MOON SPHERE; LAC 83 LANGEMAK; LAC 84 DELLINGER & LAC 100 CURIE															
L 4	2	8	70.49S 71.37E	6 ***	154648	5-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3505K	43012500	92	2.4	9	-.79
CAM.NAD.= 70.91S 76.55E SWING= 259. PHASE= 88. EMIS.ANG.= 7. CAM.RAD.= 5244.2 KM. SUN AZM= 61.9 LAC 139 HELMHOLTZ; W>1/2 MOON SPHERE; LUNAR S. HEMISPHE; LAC 142 ZEEMAN & LAC 129 M.AUSTRALE,L															
L 4	2	9	41.79S 96.20E	6 ***	162638	5-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2989K	37362500	91	4.2	25	-. **
CAM.NAD.= 42.02S 86.28E SWING= 289. PHASE= 76. EMIS.ANG.= 12. CAM.RAD.= 4728.2 KM. SUN AZM= 65.1 LAC 116 M.AUSTRAL; W>1/2 MOON SPHERE; LUNAR E. HEMISPHE; LAC 140 SCHRODINGER & LAC 43 NEPER,SCHUBER															
L 4	2	10	41.41S 96.20E	6 ***	162648	5-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2987K	37337500	89	4.3	25	-.90
CAM.NAD.= 41.88S 86.30E SWING= 287. PHASE= 76. EMIS.ANG.= 12. CAM.RAD.= 4726.2 KM. SUN AZM= 65.2 LAC 116 M.AUSTRAL; W>1/2 MOON SPHERE; LUNAR E. HEMISPHE; LAC 140 SCHRODINGER & LAC 81 ANSGARIUS,W.M															



HIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	TILT	SUN	SIDE,	
SIGN	ROLL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FAD.
#	#	MAIN	LONG.		(ESTIMATED)			TYPE		M=N.MI	PT.	FR.	LAP		
		#								K=KM.		VERT	R. R		
L 4	Z	11	41.04S	96.20E	6	000 0000	162658	5-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2986K	373250000	87	4.3 25 - .90
			CAM. RAD.= 41.74S	86.32E		SWING= 285.	PHASE= 76.	EMIS. ANG.= 12.	CAM. RAD.=	4725.2 KM.		SUN AZM= 65.4			
			LAC 116 M. AUSTRAL			W>1/2 MOON SPHERE	LUNAR E. HEMISPHE	LAC 140 SCHRÖDINGER				6	LAC 63 NEPER, SCHUBER		
L 4	Z	12	40.67S	96.19E	6	000 0000	162708	5-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2984K	373000000	86	4.3 25 - .90
			CAM. RAD.= 41.01S	86.34E		SWING= 283.	PHASE= 76.	EMIS. ANG.= 12.	CAM. RAD.=	4727.2 KM.		SUN AZM= 65.6			
			LAC 116 M. AUSTRAL			W>1/2 MOON SPHERE	LUNAR E. HEMISPHE	LAC 140 SCHRÖDINGER				6	LAC 63 NEPER, SCHUBER		
L 4	Z	17	14.25N	96.44E	6	000 0000	172957	5-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2739K	342375000	290	.7 28 - .84
			CAM. RAD.= 13.89N	91.45E		SWING= 104.	PHASE= 60.	EMIS. ANG.= 2.	CAM. RAD.=	4478.2 KM.		SUN AZM= 97.5			
			LAC 64 NE. SMYTHII			W1/4 MOONS SPHERE	LAC 115 FURHERIUS	LAC 80 LANGRENUS, M. FERT.				6	LAC 101 TSIOLKOVSKY		
L 4	Z	19	15.03N	90.51E	6	000 0000	173017	5-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2740K	342500000	312	.8 28 - .3
			CAM. RAD.= 14.19N	91.48E		SWING= 126.	PHASE= 60.	EMIS. ANG.= 2.	CAM. RAD.=	4479.2 KM.		SUN AZM= 98.0			
			DEGRADED NEGATIVE			LAC 64 NE. SMYTHII	W1/4 MOONS SPHERE	LAC 81 ANSGARIUS, W. H. SMYTHI				6	LAC 129 M. AUSTRAL, L		

TOTAL PHOTOS IN THIS GROUP = 13

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREH; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0,0

L	1	2	IR	PHOTO	PRIN.PT.	ORB	GET	GHT	M-CA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T	I	L	T	SUN	SIDE,
SUN ROLL			OR	LAT.	#	TIMES-HR	M	SEC		TYPE		M=N.MI	PT.	FR.	LAP				
#	#	MAIN		LONG.		(I=ESTIMATED)						K=KM.		VERT					
L 1	2	136	S-405	129.33E	77	***	034836	8-26-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1328K	16600000	359	3.5	21	-..	
CAM.RAD.=			8.115	129.35E	SWING= 354.			PHASE= 70.			EMIS.ANG.= 6.			CAM.RAD.=			3067.2	KM.	SUN AZM=273.7
LAC 83 LANGEHAK			LAC 84 DELLINGER			LAC 101 TSIOLKOVSKY			LAC 102 GAGARIN,E.TSIOLKOVSKY						LAC 65 GUYOT KING				
L 2	2	75	21.215	157.99E	64	***	101218	11-20-66	LUNAR	ORB LO.F=80MM B&W	-	NONE	1469K	18362500	181	12.9	19	-..	
CAM.RAD.=			9.745	158.42E	SWING= 183.			PHASE= 70.			EMIS.ANG.= 24.			CAM.RAD.=			3208.2	KM.	SUN AZM=277.5
LAC 103 PARACELSD			W1/2 MOON SPHERE			LAC 85 KEELER			LAC 84 DELLINGER						LAC 86 DAEDALUS				
L 3	2	121	24.205	126.68E	74	***	192200	2-19-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	1463K	18287500	181	12.8	20	-..	
CAM.RAD.=			12.925	127.09E	SWING= 184.			PHASE= 70.			EMIS.ANG.= 24.			CAM.RAD.=			3202.2	KM.	SUN AZM=277.4
LAC 101 TSIOLKOVSKY			W1/4 MOONS SPHERE			LAC 83 LANGEHAK			LAC 84 DELLINGER						LAC 100 CURIE				

TOTAL PHOTOS IN THIS GROUP = 3

REPRODUCTION OF THE  
 ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. \$ = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-), (+), ( ) , OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG, B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
HSB=HASSELBLAD; MAUR=MAURER; ZP,ZR,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
10 = AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEMUS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

HIS MAG		FR.	PHOTO	PRIN.	PT.	ORB	SET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE.		
SION ROLL		UR	LAT.	#	TIMES-HR	M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.	
#	MAIN		LONG.		(I=ESTIMATED)					TYPE		M=N.MI	PT.	FR.	LAP	
												K=KM.		VERT	R. R	
L 2	1	75	21.105	158.01E	64	000	0000	101218	11-20-66	LUNAR ORB HI.	410MM B&W	-	NONE	1469K	2408197	181 12.8 19 -.
CAM.NAD.= 9.745 158.42E SWING= 183. PHASE= 70. EMIS.ANG.= 24. CAM-RAD.= 3208.2 KM. SUN AZM=277.4																
WESTERN PART OF LAC 103 PARACELSUS 6 S. W. PART OF LAC 85 KEELER																
L 2	2	75	21.215	157.99E	64	000	0000	101218	11-20-66	LUNAR ORB LO.	F=40MM B&W	-	NONE	1469K	18342500	181 12.9 19 -.
CAM.NAD.= 9.745 158.42E SWING= 183. PHASE= 70. EMIS.ANG.= 24. CAM-RAD.= 3208.2 KM. SUN AZM=277.5																
LAC 103 PARACELSUS 1 W>1/2 MOON SPHERE : LAC 85 KEELER : LAC 84 DELLINGER 6 LAC 86 DAEDALUS																

TOTAL PHOTOS IN THIS GROUP = 2

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; 2P, 2H, 2S = ZEISS LENS; PLANAK, BIOGEN, SONAR; FOCAL LENGTH, MM, & MAX. F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT; SCALE AT TUDE PRIN.	T I L T AZ ANG.	SUN SIDE, ANG. FWD.
N	N	MAIN	LONG.		(=ESTIMATED)					M=N.MI K=KM.	PT. FR.	LAP VERT
L 1	2	36	8.65S 162.10W	39	***	****	145214	8-20-66 LUNAR ORB LO.F=80MM B&W	-	NONE	1344K 16800000	20 .5 20 -.90
CAM.NAD.= 8.99S 162.23W SWING= 15. PHASE= 70. EMIS.ANG.= 1.												
LAC 87 KOROLEV, DU; LAC 104 AITKEN, OR; LAC 105 MOHROVIC; LAC 106 MARIOTTE												
L 1	2	37	7.98S 157.76W	39	***	****	145410	8-20-66 LUNAR ORB LO.F=80MM B&W	-	NONE	1381K 17262500	72 2.7 15 -.90
CAM.NAD.= 8.63S 159.81W SWING= 68. PHASE= 70. EMIS.ANG.= 5.												
LAC 87 KOROLEV, DU; LAC 86 DAEDALUS; LAC 104 AITKEN, OR; LAC 68 SHARONOV												
L 1	2	38	7.93S 157.26W	39	***	****	145423	8-20-66 LUNAR ORB LO.F=80MM B&W	-	NONE	1385K 17312500	73 3.0 15 -.90
CAM.NAD.= 8.59S 159.54W SWING= 68. PHASE= 70. EMIS.ANG.= 5.												
LAC 87 KOROLEV, DU; LAC 86 DAEDALUS; LAC 68 SHARONOV; LAC 104 AITKEN, ORLOV												
L 2	1	33	16.29S 174.09E	55	***	****	025426	11-19-66 LUNAR ORB HI. 610MM B&W	-	NONE	1455K 2385246	207 .5 20 -.00
CAM.NAD.= 9.93S 174.29E SWING= 204. PHASE= 70. EMIS.ANG.= 1.												
WESTERN PART OF LAC 86 DAEDALUS												
G N. W. PART OF LAC 104 AITKEN, ORLOV												

TOTAL PHOTOS IN THIS GROUP = 4

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKSTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,ZH,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR,PHOTO	PRIN,PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L	SUN SDOF,		
SUN ROLL	OR	LAT.	#	TIMES-HR	M SEC			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	FWD.
#	#	MAIN	LONG.	(ESTIMATED)				TYPE		M=N.HI	PT.	FR.	LAP	
										K=KM.		VERT	S.	R
L 1 2	28	10.235	153.78W	33 ***	070521	8-19-66	LUNAR	ORB LO.F=80MM B&W	- NONE	1304K	16300000	275	1.6 22	-.99
CAM.NAD.= 9.395 152.92W SWING= 221. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 3043.2 KM. SUN AZM=275.8														
LAC 87 KORULEV,DU ; LAC 69 ENGLEHARDT ; LAC 70 N.W.HERTZS ; LAC 88 S.W.HERTZSPRUNG,PASCHEN & LAC 105 MOHOROVICIC														
L 1 1	30	10.275	162.71W	37 ***	073501	8-20-66	LUNAR	ORB HI. 610MM B&W	- NONE	1299K	2129500	240	2.3 24	-.99
CAM.NAD.= 9.415 161.18W SWING= 235. PHASE= 70. EMIS.ANG.= 4. CAM.RAD.= 3038.2 KM. SUN AZM=276.2														
WESTERN PART OF LAC 87 KORULEV,DOPPLER & N. W. PART OF LAC 105 MOHOROVICIC														
L 1 2	30	10.275	162.70W	37 ***	073501	8-20-66	LUNAR	ORB LO.F=80MM B&W	- NONE	1299K	16237500	240	2.3 24	-.99
CAM.NAD.= 9.415 161.18W SWING= 235. PHASE= 70. EMIS.ANG.= 4. CAM.RAD.= 3038.2 KM. SUN AZM=276.2														
LAC 87 KORULEV,DU ; LAC 105 MOHOROVIC ; LAC 106 MARIOTTE ; LAC 86 DAEDALUS & LAC 88 S.W.HERTZSPRU														
L 1 2	35	8.725	162.60W	39 ***	145201	8-20-66	LUNAR	ORB LO.F=80MM B&W	- NONE	1339K	16737500	343	.4 20	-.99
CAM.NAD.= 9.035 162.51W SWING= 338. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 3078.2 KM. SUN AZM=274.8														
LAC 87 KORULEV,DU ; LAC 70 N.W.HERTZS ; LAC 88 S.W.HERTZS ; LAC 106 MARIOTTE & LAC 105 MOHOROVICIC														
L 1 1	36	8.655	162.11W	39 ***	145214	8-20-66	LUNAR	ORB HI. 610MM B&W	- NONE	1344K	2203279	19	.5 20	-.90
CAM.NAD.= 8.995 162.23W SWING= 14. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 3083.2 KM. SUN AZM=274.7														
WESTERN PART OF LAC 87 KORULEV,DOPPLER & N. W. PART OF LAC 105 MOHOROVICIC														
L 1 2	36	8.655	162.10W	39 ***	145214	8-20-66	LUNAR	ORB LO.F=80MM B&W	- NONE	1344K	16800000	20	.5 20	-.90
CAM.NAD.= 8.995 162.23W SWING= 15. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 3083.2 KM. SUN AZM=274.7														
LAC 87 KORULEV,DU ; LAC 104 AITKEN,OR ; LAC 105 MOHOROVIC ; LAC 106 MARIOTTE & LAC 86 DAEDALUS														
L 1 2	37	7.485	157.76W	39 ***	145410	8-20-66	LUNAR	ORB LO.F=80MM B&W	- NONE	1381K	17262500	72	2.7 15	-.90
CAM.NAD.= 8.635 159.81W SWING= 68. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 3120.2 KM. SUN AZM=273.8														
LAC 87 KORULEV,DU ; LAC 86 DAEDALUS ; LAC 104 AITKEN,OR ; LAC 68 SHARONOV & LAC 69 ENGLEHARDT														
L 1 1	38	7.905	157.27W	39 ***	145423	8-20-66	LUNAR	ORB HI. 610MM B&W	- NONE	1385K	2270492	73	2.9 15	-.90
CAM.NAD.= 8.595 159.54W SWING= 68. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 3124.2 KM. SUN AZM=273.7														
EASTERN PART OF LAC 87 KORULEV,DOPPLER ; S. E. PART OF LAC 69 ENGLEHARDT & N. E. PART OF LAC 105 MOHOROVICIC														
L 1 2	38	7.905	157.26W	39 ***	145423	8-20-66	LUNAR	ORB LO.F=80MM B&W	- NONE	1385K	17312500	73	3.0 15	-.90
CAM.NAD.= 8.595 159.54W SWING= 68. PHASE= 70. EMIS.ANG.= 5. CAM.RAD.= 3124.2 KM. SUN AZM=273.7														
LAC 87 KORULEV,DU ; LAC 86 DAEDALUS ; LAC 68 SHARONOV ; LAC 104 AITKEN,ORLOV & LAC 105 MOHOROVICIC														

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE,				
SJON ROLL	OR	LAT.	"	TIMES-HR	M	SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
"	"	MAIN	"	LUNG.	(=ESTIMATED)			TYPE		M=N.MI	PT.	FR.	LAP	VERT	"	
"	"	"	"	"	"	"	"	"	"	K=KM.	"	"	"	"	"	
L 1 2	39	6.495	149.05W	39 ***	****	145801	8-20-66	LUNAR ORB LO.F=80MM B&W	-	NONE	1451K	18137500	77	7.3	7	-90
		CAM-NAD.=	7.895	155.17W	SWING=	73.	PHASE=	70.	EMIS.ANG.=	14.	CAM-RAD.=	3190.2	KM.	SUN AZH=	272.3	
		LAC 88 S.W.HERTZS	:	LAC 87 KOROLEV,DO	:	LAC 69 ENGLEHARDT	:	LAC 70 N.W.HERTZSPRUNG,ARTEM	:							LAC 105 MOHOROVICIC
L 1 2	40	6.445	148.73W	39 ***	****	145810	8-20-66	LUNAR ORB LO.F=80MM B&W	-	NONE	1454K	18175000	77	7.5	6	-90
		CAM-NAD.=	7.865	155.00W	SWING=	73.	PHASE=	70.	EMIS.ANG.=	14.	CAM-RAD.=	3193.2	KM.	SUN AZH=	272.2	
		LAC 88 S.W.HERTZS	:	LAC 87 KOROLEV,DO	:	LAC 69 ENGLEHARDT	:	LAC 70 N.W.HERTZSPRUNG,ARTEM	:							LAC 105 MOHOROVICIC

TOTAL PHOTOS IN THIS GROUP = 11

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ); & VERTICAL TO CAMERA AXIS  
(-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
HSB=HASSELBLAD; MAUR=MAURER; 2P,2B,2S = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG #	FR. OR MAIN	PHOTO OR LAT.	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES-HH M SEC (I=ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TIDE	SCALE PRIN.	AT AZ	I ANG.	L ANG.	T ANG.	SUN F.D.	SIDE LAP S. S
L 1	2	28	10.235	153.78W	33	***	0000	170521	8-19-66	LUNAR ORB LO.F=80MM B&W	- NONE	1304K	16300000	225	1.6	22	-.	..	
CAM.NAD.= 9.395 152.92W SWING= 221. PHASE= 70. EMIS.ANG.= 3. CAM.RAD.= 3043.2 KM. SUN AZH=275.8																			
LAC 87 KOROLEV,DU ; LAC 69 ENGLEHARDT ; LAC 70 N.W.HERTZS ; LAC 88 S.W.HERTZSPRUNG,PASCHEN & LAC 105 MOHOROVICIC																			
L 1	2	30	10.275	162.70W	37	***	0000	073501	8-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	1299K	16237500	240	2.3	24	-.	..	
CAM.NAD.= 9.415 161.18W SWING= 235. PHASE= 70. EMIS.ANG.= 4. CAM.RAD.= 3038.2 KM. SUN AZH=276.2																			
LAC 87 KOROLEV,DU ; LAC 105 MOHOROVIC ; LAC 106 MARIOTTE ; LAC 86 DAEDALUS & LAC 88 S.W.HERTZSPRU																			
L 1	2	35	8.725	162.60W	39	***	0000	145201	8-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	1339K	16737500	343	.4	20	-.	..	
CAM.NAD.= 9.035 162.51W SWING= 338. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 3078.2 KM. SUN AZH=274.8																			
LAC 87 KOROLEV,DU ; LAC 70 N.W.HERTZS ; LAC 88 S.W.HERTZS ; LAC 106 MARIOTTE & LAC 105 MOHOROVICIC																			
L 1	2	36	8.655	162.10W	39	***	0000	145214	8-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	1344K	16800000	20	.5	20	-.	..	90
CAM.NAD.= 8.995 162.23W SWING= 15. PHASE= 70. EMIS.ANG.= 1. CAM.RAD.= 3083.2 KM. SUN AZH=274.7																			
LAC 87 KOROLEV,DU ; LAC 104 AITKEN,DU ; LAC 105 MOHOROVIC ; LAC 106 MARIOTTE & LAC 86 DAEDALUS																			
L 1	2	39	6.495	149.05W	39	***	0000	145801	8-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	1451K	18137500	77	7.3	7	-.	..	90
CAM.NAD.= 7.895 155.17W SWING= 73. PHASE= 70. EMIS.ANG.= 14. CAM.RAD.= 3190.2 KM. SUN AZH=277.3																			
LAC 88 S.W.HERTZS ; LAC 87 KOROLEV,DU ; LAC 69 ENGLEHARDT ; LAC 70 N.W.HERTZSPRUNG,ARTEN & LAC 105 MOHOROVICIC																			
L 1	2	40	6.445	148.73W	39	***	0000	145810	8-20-66	LUNAR ORB LO.F=80MM B&W	- NONE	1454K	18175000	77	7.5	6	-.	..	90
CAM.NAD.= 7.865 155.00W SWING= 73. PHASE= 70. EMIS.ANG.= 14. CAM.RAD.= 3193.2 KM. SUN AZH=272.2																			
LAC 88 S.W.HERTZS ; LAC 87 KOROLEV,DU ; LAC 69 ENGLEHARDT ; LAC 70 N.W.HERTZSPRUNG,ARTEN & LAC 105 MOHOROVICIC																			
L 5	1	30	25.795	139.29W	10	***	0000	024335	8-09-67	LUNAR ORB HI. 610MM B&W	- NONE	5069K	8309816	261	9.6	7	-.	..	
CAM.NAD.= 25.335 104.74W SWING= 92. PHASE= 124. EMIS.ANG.= 41. CAM.RAD.= 6808.2 KM. SUN AZH=274.9																			
LAC 106 MARIOTTE ; W1/4 MOONS SPHERE ; LAC 70 N.W.HERTZS ; LAC 69 ENGLEHARDT & LAC 121 APOLLO																			
L 5	2	30	25.375	139.16W	10	***	0000	024335	8-09-67	LUNAR ORB LO.F=80MM B&W	- NONE	5069K	83362499	262	9.5	7	-.	..	
CAM.NAD.= 25.335 104.74W SWING= 93. PHASE= 124. EMIS.ANG.= 41. CAM.RAD.= 6808.2 KM. SUN AZH=274.8																			
LAC 106 MARIOTTE ; LUNAR DISC FARSID ; LUNAR *. HEMISPHE & LIMB OR HORIZON																			
L 5	2	43	47.435	151.42W	25	***	0000	035821	8-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	1191K	14887500	252	20.2	**	-.	..	
CAM.NAD.= 44.905 129.44W SWING= 91. PHASE= 130. EMIS.ANG.= 36. CAM.RAD.= 2930.2 KM. SUN AZH=267.4																			
LAC 121 APOLLO ; W1/4 MOONS SPHERE ; LIMB OR HORIZON ; LAC 106 MARIOTTE & LAC 134 BOLTZMANN																			

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LAC 106 MARIOTTE

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HIS	MAG	FR:PHOTO	PRIN.PI.	ORB	GET	SMT	H-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	1	1	L	T	SUN	SIDE
SION	ROLL	OR	LAT.	"	TIMES-HR	M	SEC	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
"	"	MAIN	LUNG.	"	(I=ESTIMATED)			TYPE		M=N.MI	PT.		FR.		LAP	
										K=KM.			VERT		X	X

TOTAL PHOTOS IN THIS GROUP = 9



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-)(+)(.) ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: S.W.A. = SUPER WIDE ANGLE LENS; EKT=EKTA 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREH; 2P,2B,2S = ZEISS LENS(PLANAR,BIOTEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. #	PHOTO OR	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUDE	SCALE PRIN.	T I L T			SUN SIDE
														AZ	ANG.	ANG.	
#	#	#	MAIN	#	#	#	(I=ESTIMATED)	#	#	#	#	M=M.MI K*KM.	PT.	FR.	VERT	LAP	
L 5	1	22	26.965	112.55W	4	...	003500	8-07-67	LUNAR ORB HI.	610MM B&W	- NONE	5106K	8370492	259	9.7	6	...
CAM.NAD.= 25.655 77.04W SWING= 91. PHASE= 126. EMIS.ANG.= 41. CAM.RAD.= 6845.2 KM. SUN AZM=274.5																	
LAC 107 ELLERMAN 6 W1/4 MOONS SPHERE																	
L 5	2	22	26.535	112.40W	4	...	003500	8-07-67	LUNAR ORB LO.	F=80MM B&W	- NONE	5106K	63824999	240	9.6	5	...
CAM.NAD.= 25.655 77.04W SWING= 92. PHASE= 126. EMIS.ANG.= 41. CAM.RAD.= 6845.2 KM. SUN AZM=274.4																	
LAC 107 ELLERMAN 1 LUNAR DISC FAR SID; LUNAR W. HEMISPHE 6 LIMB OR HORIZON																	
L 5	1	26	27.655	125.06W	7	...	014205	8-08-67	LUNAR ORB HI.	610MM B&W	- NONE	5069K	8309836	258	9.4	5	...
CAM.NAD.= 25.625 90.85W SWING= 89. PHASE= 125. EMIS.ANG.= 40. CAM.RAD.= 6808.2 KM. SUN AZM=274.4																	
LAC 107 ELLERMAN 1 W1/4 MOONS SPHERE; LAC 70 N.W.HERTZS; LAC 71 N.E.HERTZSPRUNG,GRIGG & LAC 134 ROLTZMANN																	
L 5	2	26	27.235	124.91W	7	...	014205	8-08-67	LUNAR ORB LO.	F=80MM B&W	- NONE	5069K	63362499	255	9.4	5	...
CAM.NAD.= 25.625 90.85W SWING= 90. PHASE= 125. EMIS.ANG.= 40. CAM.RAD.= 6808.2 KM. SUN AZM=274.3																	
LAC 107 ELLERMAN 1 LUNAR DISC FAR SID; LUNAR W. HEMISPHE 6 LIMB OR HORIZON																	

TOTAL PHOTOS IN THIS GROUP = 4

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EXT=EXTAR 2.8 LENS;  
 MSB=HASSELBLAD; MAUR=MAUREH; 2P,2B,2S = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR	GHI M SEC (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TIDE M=N.MI K=KM.	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDE. ANG. FR. ANG. VERT	ANG. FR. ANG. VERT	FAD. LAP S. R
L 4	2	179	69.525	74.07W	32	***	161924	5-24-67 LUNAR ORB LO.F=80MM B&W	- NONE	3592K	449000000	R6	3.6	7	-.00
CAM.NAD.= 71.38S 96.22W SWING= 246. PHASE= 94. EMIS.ANG.= 11. CAM.RAD.= 5331.2 KM. SUN AZM= 68.2															
LAC 136 BAILLEY, K; W>1/2 MOON SPHERE; LAC 129 M.AUSTRAL; LAC 108 M.ORIEN(SW 1/3 W); LAC 93 M.HUMOR., GASS															
L 4	1	186	42.27S	81.34W	33	***	050123	5-25-67 LUNAR ORB HI. 610MM B&W	- NONE	3006K	4927869	95	4.7	16	-.00
CAM.NAD.= 41.96S 92.48W SWING= 293. PHASE= 87. EMIS.ANG.= 13. CAM.RAD.= 4745.2 KM. SUN AZM= 74.2															
LAC 109 PIAZZI, V. BOUVARD; LAC 135 PINGRE N. HAUSEN; LAC 124 PHOCLIDES; LAC 123 STEKLOV															
L 4	1	187	14.97S	89.06W	33	***	053334	5-25-67 LUNAR ORB HI. 610MM B&W	- NONE	2723K	4463934	145	.5	14	-.43
CAM.NAD.= 14.36S 89.48W SWING= 330. PHASE= 77. EMIS.ANG.= 1. CAM.RAD.= 4462.2 KM. SUN AZM= 85.4															
LAC 73 RICCIOLI, NE-ORIENTAL; LAC 90 LOWELL; LAC 108 M.ORIEN(SW 1/3 W); LAC 91 EICHSTADT, SE															
L 4	2	189	41.72N	79.99W	33	***	063636	5-25-67 LUNAR ORB LO.F=80MM B&W	- NONE	2878K	359750000	110	1.9	18	-.00
CAM.NAD.= 42.88N 84.00W SWING= 273. PHASE= 77. EMIS.ANG.= 5. CAM.RAD.= 4617.2 KM. SUN AZM= 106.1															
LAC 22 SEGERARD, BUNSEN, HARDING; W>1/2 MOON SPHERE; LAC 108 M.ORIEN(SW 1/3 W); LAC 1 M. POLE NEARSI															
L 4	1	194	42.47S	86.50W	34	***	170147	5-25-67 LUNAR ORB HI. 610MM B&W	- NONE	3903K	4922951	100	5.3	16	-.90
CAM.NAD.= 42.01S 99.09W SWING= 297. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 4742.2 KM. SUN AZM= 73.3															
LAC 123 STEKLOV; LAC 109 PIAZZI, V. BOUVARD; LAC 135 PINGRE N. HAUSEN; LAC 124 PHOCLIDES															
L 4	1	195	14.91S	94.60W	34	***	173356	5-25-67 LUNAR ORB HI. 610MM B&W	- NONE	2721K	4460656	109	1.0	15	-.48
CAM.NAD.= 14.40S 96.11W SWING= 294. PHASE= 78. EMIS.ANG.= 3. CAM.RAD.= 4460.2 KM. SUN AZM= 85.2															
EASTERN PART OF LAC 90 LOWELL; LAC 108 M.ORIEN(SW 1/3 W); LAC 91 EICHSTADT, SE-ORIENTAL															
L 5	1	13	14.32N	102.40W	2	***	133325	8-06-67 LUNAR ORB HI. 610MM B&W	- NONE	5755K	9434426	279	7.6	3	-.00
CAM.NAD.= 11.15N 74.61W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7494.2 KM. SUN AZM= 270.8															
LAC 72 ELVEY NOBEL; W1/4 MOONS SPHERE; LAC 20 COULOMB; LAC 35 LANDAU; LAC 123 STEKLOV															
L 5	1	14	14.27N	102.39W	2	***	133328	8-06-67 LUNAR ORB HI. 610MM B&W	- NONE	5756K	9436066	279	7.6	3	-.90
CAM.NAD.= 11.14N 74.61W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7495.2 KM. SUN AZM= 270.8															
LAC 72 ELVEY NOBEL; W1/4 MOONS SPHERE; LAC 20 COULOMB; LAC 35 LANDAU; LAC 123 STEKLOV															
L 5	1	15	14.23N	102.38W	2	***	133330	8-06-67 LUNAR ORB HI. 610MM B&W	- NONE	5756K	9436066	279	7.6	3	-.90
CAM.NAD.= 11.13N 74.61W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7495.2 KM. SUN AZM= 270.8															
LAC 72 ELVEY NOBEL; W1/4 MOONS SPHERE; LAC 20 COULOMB; LAC 35 LANDAU; LAC 123 STEKLOV															

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LAC 108 H. ORIENTIS 1/3 W

MIS	HAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	I	L	SUN	SIDE,
SIGN	HULL	OR	LAT.	"	"	"	TIMES-HR	M	SEC	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.		
#	#	MAIN	LONG.	"	"	"	(ESTIMATED)	"	"	TYPE	"	M=N.MI	PT.	FR.	VERT	"	"	"	"
#	#	#	"	"	"	"	"	"	"	"	"	K=KM.	"	"	"	"	"	"	"
L 5	1	16	14.18N	102.37W	2	...	133333	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5757K	9437705	279	7.6	3	-.90	
			CAM.NAD.= 11.12N	74.60W			SWING= 92.		PHASE= 122.	EMIS.ANG.= 35.	CAM.RAD.=	7496.2	KM.					SUN AZH=270.8	
			LAC 72 ELVEY NOBEL	W1/4 MOONS SPHERE					LAC 20 COULOMB									LAC 35 LANDAU	
L 5	1	17	14.13N	102.36W	2	...	133336	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5757K	9437705	279	7.6	3	-.90	
			CAM.NAD.= 11.11N	74.60W			SWING= 92.		PHASE= 122.	EMIS.ANG.= 35.	CAM.RAD.=	7496.2	KM.					SUN AZH=270.9	
			LAC 72 ELVEY NOBEL	W1/4 MOONS SPHERE					LAC 20 COULOMB									LAC 35 LANDAU	
L 5	1	18	14.09N	102.35W	2	...	133338	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5758K	9439344	279	7.6	3	-.90	
			CAM.NAD.= 11.10N	74.60W			SWING= 92.		PHASE= 122.	EMIS.ANG.= 35.	CAM.RAD.=	7497.2	KM.					SUN AZH=270.9	
			LAC 72 ELVEY NOBEL	W1/4 MOONS SPHERE					LAC 20 COULOMB									LAC 35 LANDAU	
L 5	1	19	14.04N	102.34W	2	...	133341	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5758K	9439344	279	7.6	3	-.90	
			CAM.NAD.= 11.09N	74.60W			SWING= 92.		PHASE= 122.	EMIS.ANG.= 35.	CAM.RAD.=	7497.2	KM.					SUN AZH=270.9	
			LAC 72 ELVEY NOBEL	W1/4 MOONS SPHERE					LAC 20 COULOMB									LAC 35 LANDAU	
L 5	1	20	14.00N	102.33W	2	...	133344	8-06-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5758K	9439344	279	7.6	3	-.90	
			CAM.NAD.= 11.08N	74.60W			SWING= 92.		PHASE= 122.	EMIS.ANG.= 35.	CAM.RAD.=	7497.2	KM.					SUN AZH=270.9	
			LAC 72 ELVEY NOBEL	W1/4 MOONS SPHERE					LAC 20 COULOMB									LAC 35 LANDAU	
L 5	2	21	85.28S	168.60W	3	...	171706	8-06-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3341K	41762500	187	17.7	3	-.00	
			CAM.NAD.= 50.72S	69.07W			SWING= 26.		PHASE= 119.	EMIS.ANG.= 57.	CAM.RAD.=	5080.2	KM.					SUN AZH=336.7	
			LAC 145 S.POLE FARSEID	HEMISPHE					LAC 140 SCHRODIN									LAC 123 STEKLOV	
L 5	1	25	59.68N	129.77W	6	...	205019	8-07-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2551K	4181967	284	10.0	8	-.00	
			CAM.NAD.= 58.75N	99.81W			SWING= 89.		PHASE= 107.	EMIS.ANG.= 25.	CAM.RAD.=	4290.2	KM.					SUN AZH=258.8	
			LAC 20 COULOMB	W1/4 MOONS SPHERE					LAC 108 H. ORIENTIS									LAC 35 LANDAU	
L 5	1	29	59.12N	147.18W	9	...	215131	8-08-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2558K	4177049	284	11.0	11	-.00	
			CAM.NAD.= 59.08N	113.56W			SWING= 90.		PHASE= 107.	EMIS.ANG.= 28.	CAM.RAD.=	4287.2	KM.					SUN AZH=254.7	
			LAC 19 CARNOT NOB	W1/4 MOONS SPHERE					LAC 108 H. ORIENTIS									LAC 134 HOLTZMANN	

TOTAL PHOTOS IN THIS GROUP = 17

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-1,1+), ( ), OR( ) = NO INFO \* = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EXTR=EXTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREH; ZP,ZB,ZS = ZEISS LENS(PLANAR,HIOGEN,SONAR); FUCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDE
SUN ROLL	OR	LAT.	"	"	TIMES-HR	M SEC		SENSOR	AND FILTER	ITUDE	PRIN.	AZ	ANG.
"	"	HAIN	LUNG.	"	(=ESTIMATED)	"		TYPE		M=M.MI	PT.	FR.	LAP
"	"	"	"	"	"	"	"	"	"	K=KM.	"	VERT	R. R
L 4 1	161	15.135	61.78N	29	***	053134	5-23-67	LUNAR ORB HI. 610MM B&W	-	NONE	2723K	4443934	129
		CAM-RAD.= 14.365	62.94W		SWING= 315.	PHASE= 75.	EMIS-ANG.= 2.	CAM-RAD.=	4462.2 KM.		SUN AZH= 84.7		
		CENTRAL PART OF	LAC 74 CRIMALDI, B					CENTRAL PART OF	LAC 92 BYRGIUS, DA				LAC 56 HEVELIUS, REFINER
													LAC 109 PIAZZI, V. BOU
L 4 2	162	13.23N	62.18N	29	***	060208	5-23-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2670K	33375000	243
		CAM-RAD.= 13.93N	60.75W		SWING= 57.	PHASE= 71.	EMIS-ANG.= 3.	CAM-RAD.=	4409.2 KM.		SUN AZH= 93.4		
		LAC 56 HEVELIUS, R											LAC 25 CASSINI, ALPS
													LAC 21 N. GENARD, BOOLE
L 4 1	167	42.01S	60.70W	30	***	170012	5-23-67	LUNAR ORB HI. 610MM B&W	-	NONE	3009K	4932787	95
		CAM-RAD.= 41.825	72.48W		SWING= 292.	PHASE= 86.	EMIS-ANG.= 14.	CAM-RAD.=	4748.2 KM.		SUN AZH= 72.6		
		LAC 110 SCHICKARD											LAC 91 EICHSTADT, SE.
													LAC 125 SCHILLER, SEGNER
L 4 2	169	13.70N	68.49N	30	***	180302	5-23-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2672K	33400000	248
		CAM-RAD.= 14.14N	67.33W		SWING= 62.	PHASE= 71.	EMIS-ANG.= 2.	CAM-RAD.=	4411.2 KM.		SUN AZH= 93.5		
		LAC 56 HEVELIUS, R											LAC 12 PLATO, ALPINE
													LAC 21 N. GENARD, BOOLE
L 4 1	172	42.94S	67.94W	31	***	050029	5-24-67	LUNAR ORB HI. 610MM B&W	-	NONE	3011K	4936066	100
		CAM-RAD.= 41.98S	79.20W		SWING= 297.	PHASE= 86.	EMIS-ANG.= 13.	CAM-RAD.=	4750.2 KM.		SUN AZH= 73.1		
		LAC 109 PIAZZI, V.											LAC 91 EICHSTADT, SE.
													LAC 124 PHOENIX, SEGNER
L 4 2	172	42.93S	67.94W	31	***	050029	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3011K	37637500	100
		CAM-RAD.= 41.98S	79.20W		SWING= 297.	PHASE= 86.	EMIS-ANG.= 13.	CAM-RAD.=	4750.2 KM.		SUN AZH= 73.1		
		LAC 109 PIAZZI, V. BOUVARD											LAC 144 SCOTT, S. POLAR NEAR SIDE
													LAC 72 ELVEY NOREL
L 4 2	174	13.17N	76.00W	31	***	060318	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2673K	33412500	255
		CAM-RAD.= 13.91N	73.95W		SWING= 69.	PHASE= 71.	EMIS-ANG.= 3.	CAM-RAD.=	4412.2 KM.		SUN AZH= 93.0		
		LAC 55 VASCOUEGAN											LAC 24 SINUS IRIDUM
													LAC 21 N. GENARD, BOOLE
L 4 1	179	69.52S	74.07W	32	***	161924	5-24-67	LUNAR ORB HI. 610MM B&W	-	NONE	3592K	5888525	86
		CAM-RAD.= 71.38S	96.22W		SWING= 246.	PHASE= 94.	EMIS-ANG.= 11.	CAM-RAD.=	5331.2 KM.		SUN AZH= 68.2		
		LAC 136 GAILLEY, KIRCHER											LAC 109 PIAZZI, V. BO
													LAC 143 S. HAUSEN LEGENTIL
													LAC 124 PHOENIX, SEGNER
L 4 1	180	40.83S	75.22W	32	***	170054	5-24-67	LUNAR ORB HI. 610MM B&W	-	NONE	3009K	4932787	85
		CAM-RAD.= 42.00S	85.86W		SWING= 283.	PHASE= 87.	EMIS-ANG.= 13.	CAM-RAD.=	4748.2 KM.		SUN AZH= 74.6		
		CENTRAL PART OF	LAC 109 PIAZZI, V.					CENTRAL PART OF	LAC 124 PHOENIX, SEGNER				LAC 91 EICHSTADT, SE. ORION
													LAC 110 SCHICKARD, LA

MIS MAG		FR, PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	TILT	SUN SIDE		
SUN ROLL	OR	LAT.	LONG.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TYPE	PRIN.	ANG.		
"	"	MAIN			(=ESTIMATED)			TYPE		M=N-MI	PT.	FR.		
										K=KM.		VERT		
L 4	2	180	40.835	75.23W	32	000	170054	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE 3009K 37412500	85	4.6 16	-1.00
CAM.RAD.= 41.995 85.86W SWING= 283. PHASE= 87. EMIS.ANG.= 13. CAM.RAD.= 4748.2 KM. SUN AZH= 74.6														
LAC 109 PIAZZI,V.BOUVARD ; @1/2 MOON SPHERE ; LAC 144 SCOTT,S.POLE NEAR SIDE >6 LAC 72 ELVEY NOBEL														
L 4	1	186	42.275	81.34W	33	000	050123	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE 3006K 4927849	95	4.7 16	-1.00
CAM.RAD.= 41.965 92.48W SWING= 293. PHASE= 87. EMIS.ANG.= 13. CAM.RAD.= 4745.2 KM. SUN AZH= 74.2														
LAC 109 PIAZZI,V.BOUVARD ; LAC 135 PINGRE N.HAUSEN ; LAC 124 PHOXYLIDES 6 LAC 123 STEKLOV														
L 4	2	186	42.265	81.34W	33	000	050123	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE 3006K 37575000	95	4.7 16	-1.00
CAM.RAD.= 41.965 92.48W SWING= 293. PHASE= 87. EMIS.ANG.= 13. CAM.RAD.= 4745.2 KM. SUN AZH= 74.2														
LAC 109 PIAZZI,V.BOUVARD ; @1/2 MOON SPHERE ; LAC 144 SCOTT,S.POLE NEAR SIDE >6 LAC 72 ELVEY NOBEL														
L 4	1	193	63.895	85.97W	34	000	162428	5-25-67	LUNAR ORB HI. 610MM	-	NONE 3519K 5768852	70	4.8 9	-1.00
CAM.RAD.= 68.875 107.44W SWING= 232. PHASE= 95. EMIS.ANG.= 15. CAM.RAD.= 5258.2 KM. SUN AZH= 68.6														
LAC 135 PINGRE N.HAUSEN ; LAC 124 PHOXYLIDE ; LAC 109 PIAZZI,V. ; LAC 123 STEKLOV ; LAC 143 S.HA 6 LAC 134 HAIL														
L 4	1	194	42.975	86.50W	34	000	170147	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE 3003K 4922951	100	5.1 16	-1.90
CAM.RAD.= 42.615 99.09W SWING= 297. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 4742.2 KM. SUN AZH= 73.3														
LAC 123 STEKLOV ; LAC 109 PIAZZI,V.BOUVARD ; LAC 135 PINGRE N.HAUSEN 6 LAC 124 PHOXYLIDES														
L 5	1	25	59.68N	129.77W	6	000	205019	8-07-67	LUNAR ORB HI. 610MM B&W	-	NONE 2551K 4181967	284	10.0 8	-1.00
CAM.RAD.= 58.75N 99.81W SWING= 89. PHASE= 107. EMIS.ANG.= 25. CAM.RAD.= 4290.2 KM. SUN AZH= 258.8														
LAC 20 COULOMB ; @1/4 MOONS SPHERE ; LAC 108 M.ORIENTS ; LAC 109 PIAZZI,V.BOUVARD 6 LAC 35 LANBAU														

TOTAL PHOTOS IN THIS GROUP = 15

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTA 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZH,ZS = ZEISS LENS(PLANAR, BIOGEN, SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

SUN	ROLL	OR	LAT.	LONG.	#	TIMES-HR	M SEC	(ESTIMATED)	M-DA-YR	CAMERA-LENS OR	SENSOR	FILM-EXPOSURE	AND FILTER	ALTITUDE	SCALE AT	TILT	SUN SIDE,
"	"	MAIN	"	"	"	"	"	"	"	"	TYPE	"	"	M=K.MI	PT.	AZ	ANG. ANG. FWD. LAP
"	"	"	"	"	"	"	"	"	"	"	"	"	"	K=KM.	"	VERT	"
L 4	2	138	13.71N	36.45W	25	000	055724		5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE		2671K	33387500	263	1.3 18 -.61
CAM-MAUR.= 13.92N 34.43W SWING= 78. PHASE= 68. EMIS.ANG.= 3. CAM-MAUR.= 4410.2 KM. SUN AZH= 94.0																	
LAC 57 KEPLER, ENC; W>1/2 MOON SPHERE; LAC 110 SCHICKARD; LAC 11 J.HERSCHEL, JURAS, ROUGIER & LAC 26 EUDOXUS, RURG																	
L 4	1	142	42.04S	33.37W	26	000	165605		5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE		3007K	4929508	93	5.2 20 -.00
CAM-MAUR.= 42.14S 45.58W SWING= 291. PHASE= 84. EMIS.ANG.= 14. CAM-MAUR.= 4746.2 KM. SUN AZH= 70.4																	
WESTERN PART OF LAC 111 WILHELM, EL; LAC 125 SCHILLER, S; LAC 126 CLAVIUS, M; LAC 93 M.HUMOR., GASSENDI & LAC 110 SCHICKARD																	
L 4	1	148	42.95S	41.38W	27	000	045722		5-22-67	LUNAR ORB HI. 610MM B&W	-	NONE		3009K	4932787	99	4.6 18 -.00
CAM-MAUR.= 42.11S 52.33W SWING= 297. PHASE= 84. EMIS.ANG.= 13. CAM-MAUR.= 4748.2 KM. SUN AZH= 71.6																	
LAC 110 SCHICKARD; LAC 111 WILHELM, E; LAC 125 SCHILLER,; LAC 92 BYRGIUS, DARWIN & LAC 93 M.HUMOR., GASS																	
L 4	2	148	42.94S	41.38W	27	000	045722		5-22-67	LUNAR ORB LO.F=80MM B&W	-	NONE		3009K	37612500	99	4.6 18 -.00
CAM-MAUR.= 42.11S 52.33W SWING= 297. PHASE= 84. EMIS.ANG.= 13. CAM-MAUR.= 4748.2 KM. SUN AZH= 71.6																	
LAC 110 SCHICKARD, LACROIX; W>1/2 MOON SPHERE; LAC 144 SCOTT, S. POLE NEAR SIDE >6 LAC 56 HEVELIUS, REI																	
L 4	1	155	42.41S	48.89W	28	000	165826		5-22-67	LUNAR ORB HI. 610MM B&W	-	NONE		3011K	4936066	95	4.3 17 -.90
CAM-MAUR.= 42.07S 59.07W SWING= 293. PHASE= 84. EMIS.ANG.= 12. CAM-MAUR.= 4750.2 KM. SUN AZH= 72.8																	
CENTRAL PART OF LAC 110 SCHICKARD; LAC 111 WILHELM, EL; LAC 125 SCHILLER,; LAC 92 BYRGIUS, DARWIN & LAC 93 M.HUMOR.,																	
L 4	2	155	42.40S	48.89W	28	000	165827		5-22-67	LUNAR ORB LO.F=80MM B&W	-	NONE		3011K	37637500	95	4.3 17 -.00
CAM-MAUR.= 42.07S 59.07W SWING= 293. PHASE= 84. EMIS.ANG.= 12. CAM-MAUR.= 4750.2 KM. SUN AZH= 72.8																	
LAC 110 SCHICKARD, LACROIX; W>1/2 MOON SPHERE; LAC 144 SCOTT, S. POLE NEAR SIDE >6 LAC 56 HEVELIUS, REI																	
L 4	1	160	42.79S	54.52W	29	000	045917		5-23-67	LUNAR ORB HI. 610MM B&W	-	NONE		3012K	4937705	99	4.8 17 -.00
CAM-MAUR.= 42.03S 65.80W SWING= 296. PHASE= 85. EMIS.ANG.= 13. CAM-MAUR.= 4751.2 KM. SUN AZH= 71.3																	
LAC 110 SCHICKARD; WESTERN PART OF LAC 125 SCHILLER,; SOUTHERN PART OF LAC 92 BYRGIUS, DARWIN & LAC 124 PHOCLIDES																	
L 4	2	160	42.79S	54.52W	29	000	045917		5-23-67	LUNAR ORB LO.F=80MM B&W	-	NONE		3012K	37650000	99	4.8 17 -.00
CAM-MAUR.= 42.03S 65.80W SWING= 296. PHASE= 85. EMIS.ANG.= 13. CAM-MAUR.= 4751.2 KM. SUN AZH= 72.3																	
LAC 110 SCHICKARD, LACROIX; W>1/4 MOON SPHERE; LAC 144 SCOTT, S. POLE NEAR SIDE >6 LAC 55 VASCOGAMMA																	
L 4	1	166	71.31S	60.23W	30	000	161844		5-23-67	LUNAR ORB HI. 610MM B&W	-	NONE		3593K	5890164	101	3.4 7 -.00
CAM-MAUR.= 71.19S 82.44W SWING= 264. PHASE= 93. EMIS.ANG.= 10. CAM-MAUR.= 5332.2 KM. SUN AZH= 66.4																	
LAC 136 BAILLEY, K; LAC 124 PHOCLIDE; LAC 110 SCHICKARD; LAC 137 NEWTON, MORETUS & LAC 144 SCOTT, S. POLE																	

## LAC 110 SCHICKARD, LACROIX

HIS MAG		FR. PHOTO		PRIN. PT. URB		GLT		GHT		M-DA-YR		CAMERA-LENS OR		FILM-EXPOSURE		ALTI SCALE AT		T I L I		SUN SIDE.	
SIOW	HOLL	UR	LAT.	#	TIMES-HH	M SEC	(I=ESTIMATED)					SENSOR		AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
"	"	MAIN	LUNG.									TYPE			M=N.MI K=KM.	PT.	FR.	VERT	LAP	R, R	
L 4	1	167	42.015	60.70W	30	...	170012	5-23-67	LUNAR	ORB HI.	610MM	B&W	-	NONE	3009K	4932707	95	5.0	17	-...	
CAM. RAD. = 41.825 72.48W SWING = 292. PHASE = 86. EMIS. ANG. = 14. CAM. RAD. = 4748.2 KM. SUN AZM = 72.6																					
LAC 110 SCHICKARD ; LAC 109 PIAZZI, V. ; LAC 124 PHO CYLIDE ; LAC 125 SCHILLER, SEGNER																					
L 4	2	167	42.015	60.70W	30	...	170012	5-23-67	LUNAR	ORB LO.	F=80MM	B&W	-	NONE	3009K	37612500	95	5.0	17	-...	
CAM. RAD. = 41.825 72.48W SWING = 292. PHASE = 86. EMIS. ANG. = 14. CAM. RAD. = 4748.2 KM. SUN AZM = 72.6																					
LAC 110 SCHICKARD, LACROIX ; LAC 144 SCOTT, S. POLY NEARSIDE > 6 LAC 91 EICHSTADT, SE.																					
L 4	1	172	42.945	67.94W	31	...	050029	5-24-67	LUNAR	ORB HI.	610MM	B&W	-	NONE	3011K	4936066	100	4.8	16	-...	
CAM. RAD. = 41.985 79.20W SWING = 297. PHASE = 86. EMIS. ANG. = 13. CAM. RAD. = 4750.2 KM. SUN AZM = 73.1																					
LAC 109 PIAZZI, V. ; LAC 110 SCHICKARD ; LAC 124 PHO CYLIDE ; LAC 125 SCHILLER, SEGNER																					
L 4	1	180	40.835	75.22W	32	...	170054	5-24-67	LUNAR	ORB HI.	610MM	B&W	-	NONE	3009K	4932707	85	4.6	16	-...	
CAM. RAD. = 42.005 85.86W SWING = 283. PHASE = 87. EMIS. ANG. = 13. CAM. RAD. = 4748.2 KM. SUN AZM = 74.6																					
CENTRAL PART OF LAC 109 PIAZZI, V. ; CENTRAL PART OF LAC 124 PHO CYLIDE ; LAC 91 EICHSTADT, SE. ORLEN & LAC 110 SCHICKARD, LA																					
L 4	2	188	13.39N	89.22W	33	...	060409	5-25-67	LUNAR	ORB LO.	F=80MM	B&W	-	NONE	2675K	33437500	255	1.3	15	-78	
CAM. RAD. = 13.72N 87.19W SWING = 69. PHASE = 72. EMIS. ANG. = 3. CAM. RAD. = 4414.2 KM. SUN AZM = 92.7																					
LAC 55 VASCO DE GAMA ; > 1/2 MOON SPHERE ; LAC 123 STEKLOV ; LAC 21 N. GERARD, BOOLE																					
L 5	2	168	30.535	37.61W	70	...	040441	8-17-67	LUNAR	ORB LO.	F=80MM	B&W	-	NONE	169K	2112500	255	9.9	10	-...	
CAM. RAD. = 30.30S 36.51W SWING = 150. PHASE = 70. EMIS. ANG. = 11. CAM. RAD. = 1908.2 KM. SUN AZM = 82.6																					
S. E. PART OF LAC 93 M. HUMOR, GASSENDI ; N. W. PART OF LAC 111 WILHELM, E & N. E. PART OF LAC 110 SCHICKARD, L																					

TOTAL PHOTOS IN THIS GROUP = 15

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. BRACKET MOUNTED; G = CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EXTR-EKTAR 2.8 LENS;  
 HSB = HASSELBLAD; MAUK = MAURER; ZP, ZB, ZS = ZEISS LENS (PLANAR, BIOGEN, SONAR); FOCAL LENGTH (MM) & MAX. F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR, OR	PHOTO LAT.	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES	GMT HR M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TIDE	SCALE PRIN.	AT PT.	TILT AZ	SUN ANG.	SIDE ANG.	FWD. LAP
#	#	MAIN					(I=ESTIMATED)					M=N.MI K=KM.				FR.		
L 4	2	114	13.47N	10.97W	21	...	054938	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2487K	33487500	261	1.8	19	-	.64
CAM.NAD.= 13.89N 8.09W SWING= 77. PHASE= 66. EMIS.ANG.= 5. CAM.RAD.= 4426.2 KM. SUN AZM= 94.2																		
LAC 58 COPERNICUS, REINHOLD ; W>1/2 MOON SPHERE ; LAC 111 WILHELM, E ; LAC 12 PLATO, ALP ; LAC 26 FUDOX 6 LAC 96 ALTAI																		
L 4	1	119	42.79S	7.44W	22	...	164855	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2991K	4903279	97	4.8	20	-	...
CAM.NAD.= 42.26S 18.74W SWING= 295. PHASE= 82. EMIS.ANG.= 13. CAM.RAD.= 4730.2 KM. SUN AZM= 69.1																		
LAC 112 TYCHO, STO ; LAC 126 CLAVIUS, M ; LAC 127 HOMMEL, VL ; LAC 94 PITATUS, M. NUBIUM & LAC 95 PURBACH, ARZAC																		
L 4	2	121	13.81N	16.80W	22	...	175143	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2482K	33525000	268	1.3	20	-	.66
CAM.NAD.= 13.87N 14.69W SWING= 83. PHASE= 67. EMIS.ANG.= 3. CAM.RAD.= 4421.2 KM. SUN AZM= 94.4																		
LAC 58 COPERNICUS, REINHOLD ; W>1/2 MOON SPHERE ; LAC 111 WILHELM, E ; LAC 96 ALTAI SCA ; LAC 11 J.HER & LAC 27 GEMIN																		
L 4	1	124	43.00S	14.08W	23	...	045059	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	2994K	4908197	99	4.8	20	-	...
CAM.NAD.= 42.21S 25.42W SWING= 297. PHASE= 82. EMIS.ANG.= 13. CAM.RAD.= 4733.2 KM. SUN AZM= 69.4																		
EASTERN PART OF LAC 111 WILHELM, E ; LAC 112 TYCHO, STO ; SOUTHERN PART OF LAC 94 PITATUS, M. NUBIUM & LAC 126 CLAVIUS, MAGINUS																		
L 4	2	124	43.00S	14.08W	23	...	045059	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2994K	37425000	99	4.8	20	-	...
CAM.NAD.= 42.20S 25.42W SWING= 297. PHASE= 82. EMIS.ANG.= 13. CAM.RAD.= 4733.2 KM. SUN AZM= 69.4																		
LAC 111 WILHELM, E ; W>1/2 MOON SPHERE ; LAC 94 PITATUS, M. ; LAC 77 PTOLMAEUS, KLEIN & LAC 144 SCOTT, S. POLF																		
L 4	2	126	12.87N	23.05W	23	...	055348	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2477K	33462500	238	1.3	20	-	...
CAM.NAD.= 13.94N 21.27W SWING= 53. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4416.2 KM. SUN AZM= 94.0																		
LAC 58 COPERNICUS, REINHOLD ; W>1/2 MOON SPHERE ; LAC 111 WILHELM, ELGER, MEE & LAC 10 RABBAFF, N. PR																		
L 4	1	130	65.02S	25.85W	24	...	161143	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	3575K	5860656	46	4.1	9	-	...
CAM.NAD.= 71.63S 40.64W SWING= 211. PHASE= 93. EMIS.ANG.= 13. CAM.RAD.= 5114.2 KM. SUN AZM= 69.3																		
LAC 137 NEUTON, HO ; LAC 136 BAILLEY, K ; LAC 126 CLAVIUS, M ; LAC 125 SCHILLER, SEGNER & LAC 111 WILHELM, ELGE																		
L 4	1	131	36.51S	23.47W	24	...	165252	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	2999K	4916393	52	5.0	20	-	...
CAM.NAD.= 42.20S 32.12W SWING= 251. PHASE= 83. EMIS.ANG.= 14. CAM.RAD.= 4738.2 KM. SUN AZM= 74.0																		
LAC 111 WILHELM, ELGER, MEE ; LAC 112 TYCHO, STOFER ; LAC 93 M. HUMOR., GASSENDI & LAC 94 PITATUS, M. NU																		
L 4	2	131	36.51S	23.47W	24	...	165252	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2999K	37487500	52	5.0	20	-	.62
CAM.NAD.= 42.20S 32.12W SWING= 251. PHASE= 83. EMIS.ANG.= 14. CAM.RAD.= 4738.2 KM. SUN AZM= 74.0																		
LAC 111 WILHELM, ELGER, MEE ; W>1/2 MOON SPHERE ; LAC 144 SCOTT, S. POLF NEARSIDE & LAC 57 KEPLER, ENCKE																		



MIS	NAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	H-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	I	L	T	SUN	SIDE.
SUN	HULL	ON	LAT.	"	"	"	TIMES-HR	M	SEC	SENSOR	AND FILTER	TUDE	PRIN.	A7	ANG.	ANG.	FWD.	LAP		
#	#	MAIN	LONG.				(ESTIMATED)			TYPE		M=N.MI	PT.		FR.	VERT	B. S			
L 4	1	136	42.65S	27.40W	25	***	045435	5-21-67	LUNAR	ORB HI.	610MM B&W	-	NONE	3003K	4922951	97	4.8	19	-...	
			CAM. RAD. = 42.16S	38.84W			SWING = 295.		PHASE = 33.	EMIS. ANG. = 13.		CAM. RAD. = 4742.2 KM.			SUN AZM = 70.3					
			LAC 111 WILHELM, EL	LAC 125 SCHILLER, S					LAC 126 CLAVIUS, M						6	LAC 94 PITATUS, M. HUB				
L 4	2	136	42.64S	27.40W	25	***	045435	5-21-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3003K	37537500	97	4.8	19	-...		
			CAM. RAD. = 42.16S	38.84W			SWING = 295.		PHASE = 83.	EMIS. ANG. = 13.		CAM. RAD. = 4742.2 KM.			SUN AZM = 70.3					
			LAC 111 WILHELM, ELGER, MEE						>1/2 MOON SPHERE							LAC 144 SCOTT, S. POL				
																NEARSIDE >6			LAC 57 KEPLER, ENCKE	
L 4	1	142	42.04S	33.37W	26	***	045605	5-21-67	LUNAR	ORB HI.	610MM B&W	-	NONE	3007K	4929508	93	5.2	20	-...	
			CAM. RAD. = 42.14S	45.58W			SWING = 291.		PHASE = 84.	EMIS. ANG. = 14.		CAM. RAD. = 4746.2 KM.			SUN AZM = 70.4					
			WESTERN PART OF LAC 111 WILHELM, EL	LAC 125 SCHILLER, S					LAC 126 CLAVIUS, M							6	LAC 110 SCHICKAR			
L 4	2	142	42.04S	33.37W	26	***	045605	5-21-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3007K	37587500	93	5.2	20	-...		
			CAM. RAD. = 42.14S	45.58W			SWING = 291.		PHASE = 84.	EMIS. ANG. = 14.		CAM. RAD. = 4746.2 KM.			SUN AZM = 70.4					
			LAC 111 WILHELM, ELGER, MEE						>1/2 MOON SPHERE										LAC 56 HEVELIUS, REI	
L 4	1	148	42.95S	41.38W	27	***	045722	5-22-67	LUNAR	ORB HI.	610MM B&W	-	NONE	3009K	4932787	99	4.6	18	-...	
			CAM. RAD. = 42.11S	52.33W			SWING = 297.		PHASE = 84.	EMIS. ANG. = 13.		CAM. RAD. = 4748.2 KM.			SUN AZM = 71.6					
			LAC 110 SCHICKARD	LAC 111 WILHELM, EL					LAC 125 SCHILLER, S							6	LAC 93 M. HUMOR, GASS			
L 4	1	155	42.41S	48.09W	28	***	045826	5-22-67	LUNAR	ORB HI.	610MM B&W	-	NONE	3011K	4936066	95	4.3	17	-90	
			CAM. RAD. = 42.07S	59.07W			SWING = 293.		PHASE = 84.	EMIS. ANG. = 12.		CAM. RAD. = 4750.2 KM.			SUN AZM = 72.8					
			CENTRAL PART OF LAC 110 SCHICKARD	LAC 111 WILHELM, EL					LAC 125 SCHILLER, S							6	LAC 93 M. HUMOR, GASS			
L 4	2	157	43.36N	56.27W	28	***	046116	5-22-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2669K	33362500	255	1.4	17	-58		
			CAM. RAD. = 43.91N	54.17W			SWING = 69.		PHASE = 70.	EMIS. ANG. = 3.		CAM. RAD. = 4408.2 KM.			SUN AZM = 93.4					
			LAC 56 HEVELIUS, R	>1/2 MOON SPHERE					LAC 92 BYRGIVUS, DA							6	LAC 75 CASSINI, ALPS			
L 4	1	158	41.99N	47.66W	28	***	046333	5-22-67	LUNAR	ORB HI.	610MM B&W	-	NONE	2866K	4698361	106	1.7	20	-78	
			CAM. RAD. = 42.85N	51.22W			SWING = 271.		PHASE = 75.	EMIS. ANG. = 4.		CAM. RAD. = 4605.2 KM.			SUN AZM = 107.7					
			EASTERN PART OF LAC 23 KUMKER, SHAR	LAC 24 SINUS INIDU					LAC 111 WILHELM, EL							6	LAC 39 ARISTARCH			
L 4	2	181	43.09S	82.19W	32	***	047307	5-24-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2724K	34050000	26	.9	15	-	1	
			CAM. RAD. = 44.40S	82.86W			SWING = 212.		PHASE = 76.	EMIS. ANG. = 2.		CAM. RAD. = 4463.2 KM.			SUN AZM = 85.7					
			LAC 73 RICCIOLI, NE. ORIENTAL						>1/2 MOON SPHERE										LAC 21 H. GERARD, BOO	
L 4	2	187	44.96S	89.06W	33	***	048334	5-25-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2723K	34037500	145	.5	14	-...		
			CAM. RAD. = 44.36S	89.49W			SWING = 330.		PHASE = 77.	EMIS. ANG. = 1.		CAM. RAD. = 4462.2 KM.			SUN AZM = 85.4					
			LAC 73 RICCIOLI, NE. ORIENTAL						>1/2 MOON SPHERE										LAC 34 RONTGEN LORE	
L 5	2	125	42.89S	11.72W	55	***	041605	8-15-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	220K	27500000	187	5.4	9	-...		
			CAM. RAD. = 42.24S	11.60W			SWING = 91.		PHASE = 79.	EMIS. ANG. = 6.		CAM. RAD. = 1959.2 KM.			SUN AZM = 79.6					
			S. N. PART OF LAC 112 TYCHO, STOFER																	
L 5	2	126	42.30S	11.63W	55	***	041615	8-15-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	217K	27125000	187	4.9	9	-88		
			CAM. RAD. = 41.84S	11.53W			SWING = 91.		PHASE = 79.	EMIS. ANG. = 5.		CAM. RAD. = 1956.2 KM.			SUN AZM = 79.7					
			S. N. PART OF LAC 112 TYCHO, STOFER																6 EASTERN PART OF LAC 111 WILHELM, ELGER, MEE	

111

LAC 111 WILHELM, ELGER, MEE

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MIS SION	MAG ROLL	FR, PHOTO OR	PRIN. PT. LAT.	ORB N	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TIDE PRIN. M=N.MI PT. K=KM.	T I L T A7 ANG. ANG. FR. VERT	SUN SIDE. FWD. LAP
L 5	2	127	41.71S	11.54W	55	00.00.00	041625	8-15-67 LUNAR ORB LO.F=80MM B6W	- NONE	214K 2675000	187 4.4 9	-.88
CAM.RAD.= 41.17S 11.45W SWING= 91. WESTERN PART OF LAC 112 TYCHO, STOFER												
L 5	2	128	41.11S	11.46W	55	00.00.00	041636	8-15-67 LUNAR ORB LO.F=80MM B6W	- NONE	212K 2650000	187 3.9 9	-.88
CAM.RAD.= 40.64S 11.38W SWING= 91. WESTERN PART OF LAC 112 TYCHO, STOFER												
L 5	2	168	36.53S	37.61W	70	00.00.00	040441	8-17-67 LUNAR ORB LO.F=80MM B6W	- NONE	169K 2112500	255 9.9 10	-.00
CAM.RAD.= 36.36S 36.51W SWING= 160. S. E. PART OF LAC 93 M. HUMOR, GASSENDI												
PHASE= 79. EHIS.ANG.= 5. CAM.RAD.= 1953.2 KM. SUN AZH= 79.7 6 EASTERN PART OF LAC 111 WILHELM, ELGER, MEE												
PHASE= 79. EHIS.ANG.= 4. CAM.RAD.= 1951.2 KM. SUN AZH= 79.7 6 EASTERN PART OF LAC 111 WILHELM, ELGER, MEE												
PHASE= 70. EHIS.ANG.= 11. CAM.RAD.= 1908.2 KM. SUN AZH= 82.6 1 N. W. PART OF LAC 111 WILHELM, E 6 N. E. PART OF LAC 110 SCHICKARD, L												

TOTAL PHOTOS IN THIS GROUP = 24

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 (TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+), ( ), OR(O) = NO INFO W = APPROXIMATELY NEXT TO MAGN. H=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREN; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS;  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

HIS	MAG	FR,PHOTO	PRIN.PI.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILE-EXPOSURE	ALT	SCALE AT	T I L T	SUN SIDE
SUN ROLL	OR	LAT.	#	TIMES-HR	M SEC			SENSOR	AND FILTER	TIDE	PRIN.	A7	ANG. ANG. FAD.
#	#	MAIN	LONG.	(ESTIMATED)				TYPE		M=N.MI	PT.	FR.	LAP
										K=KM.		VERT	%
L 4	2	76	42.77S	37.87E	15	0000	043514	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2972K 37150000	97 4.5 22 -.
CAM.NAD.= 42.21S 27.23E SWING= 296. PHASE= 79. EMIS.ANG.= 12. CAM.RAD.= 4711.2 KM. SUN AZM= 67.2													
LAC 114 RHEIA,JA : W>1/2 MOON SPHERE ; LAC 78 THEOPHILUS ; LAC 112 TYCHO,STOFER & LAC 144 SCOTT,S.POLF													
L 4	2	77S	14.92S	36.15E	15	0000	050718	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2730K 34125000	141 .4 23 -.
CAM.NAD.= 14.46S 29.77E SWING= 327. PHASE= 68. EMIS.ANG.= 1. CAM. 7. = 4469.2 KM. SUN AZM= 83.0													
DEGRADED NEGATIVE ; LAC 79 COLUMBO,NE ; W>1/2 MOON SPHERE ; LAC 42 M.SERENITY,DANES & LAC 78 THEOPHILUS,KA													
L 4	2	95	42.53S	18.70E	18	0000	164034	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2975K 37187500	95 4.7 22 -.
CAM.NAD.= 42.27S 7.64E SWING= 294. PHASE= 80. EMIS.ANG.= 13. CAM.RAD.= 4714.2 KM. SUN AZM= 67.9													
LAC 113 MAUROLYCUS,RAB.LEVI ; W>1/2 MOON SPHERE ; LAC 140 SCHRODING ; LAC 129 M.AUSTRA ; LAC 78 THEOP & LAC 112 TYCH													
L 4	2	96	15.17S	10.66E	18	0000	171241	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2722K 34025000	138 .6 22 -.
CAM.NAD.= 14.45S 9.99E SWING= 324. PHASE= 69. EMIS.ANG.= 2. CAM.RAD.= 4461.2 KM. SUN AZM= 83.2													
LAC 78 THEOPHILUS ; W>1/2 MOON SPHERE ; LAC 41 APENNINES ; LAC 26 EUDOXUS,BURG & LAC 126 CLAVIUS,MAGI													
L	1	100	42.72S	12.29E	19	0000	044237	5-18-67	LUNAR ORB HI. 610MM B&W	-	NONE	2978K 4881967	96 4.8 21 -.
CAM.NAD.= 42.26S 1.05E SWING= 295. PHASE= 81. EMIS.ANG.= 13. CAM.RAD.= 4717.2 KM. SUN AZM= 68.0													
WESTERN PART OF LAC 113 MAUROLYCUS,RAB.LEVI ; LAC 112 TYCHO,STO & LAC 127 HOMMEL,VLACQ													
L 4	2	102	12.96N	3.63E	19	0000	054527	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2699K 33737500	237 1.1 22 -.
CAM.NAD.= 13.69N 5.14E SWING= 53. PHASE= 66. EMIS.ANG.= 3. CAM.RAD.= 4438.2 KM. SUN AZM= 94.7													
LAC 57 M.VAPORUM,HYGINUS ; W1/4 MOONS SPHERE ; LAC 58 COPERNICUS,RFINHOLD & LAC 112 TYCHO,STOFER													
L 4	2	107	42.41S	6.45E	20	0000	164442	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2982K 37275000	94 5.0 22 -.
CAM.NAD.= 42.26S 5.42E SWING= 293. PHASE= 81. EMIS.ANG.= 14. CAM.RAD.= 4721.2 KM. SUN AZM= 67.9													
LAC 112 TYCHO,STOFER ; W>1/2 MOON SPHERE ; LAC 59 M.VAPORUM,HYGINUS & LAC 79 COLUMBO,NF.M													
L 4	1	112	42.58S	1.35W	21	0000	044650	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2986K 4895082	95 4.6 20 -.
CAM.NAD.= 42.26S 12.09W SWING= 294. PHASE= 81. EMIS.ANG.= 13. CAM.RAD.= 4725.2 KM. SUN AZM= 69.2													
LAC 112 TYCHO,STOFER ; LAC 113 MAUROLYCUS,RAB.LEVI ; LAC 126 CLAVIUS,MAGINUS & LAC 127 HOMMEL,VLAC													
L 4	2	112	42.57S	1.35W	21	0000	044650	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2986K 37325000	95 4.6 20 -.
CAM.NAD.= 42.26S 12.09W SWING= 294. PHASE= 81. EMIS.ANG.= 13. CAM.RAD.= 4725.2 KM. SUN AZM= 69.2													
LAC 112 TYCHO,STOFER ; W>1/2 MOON SPHERE ; LAC 144 SCOTT,S.POLF NEARSIDE & LAC 76 RIPHAUS MT.													

MIS SION	MAG NULL	FR,PHOTO OR LAT.	PRIN,PT. #	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE	SCALE AT PRIN. PT.	T I L T AZ	SUN SIDF. ANG. ANG. FR. ANG. ANG. FR. ANG. ANG. FR.
L 4 1	119	42.795	7.44W	22	000	164855	5-19-67	LUNAR ORB HI. 610MM B&W	-	NONE	2991K 4903279	97	4.8 20 -.
CAM-HAD.= 42.265 18.74W SWING= 295. PHASE= 82. EMIS.ANG.= 13. CAM-RAD.= 4730.2 KM. SUN AZM= 69.1													
LAC 112 TYCHO,STU : LAC 126 CLAVIUS,M : LAC 127 HOMMEL,VL : LAC 94 PITATUS,M.NUBIUM 6 LAC 95 PUNRACH,ARZAC													
L 4 2	119	42.785	7.44W	22	000	164855	5-19-67	LUNAR ORB LO,F=80MM B&W	-	NONE	2991K 37387500	97	4.8 20 -.
CAM-HAD.= 42.265 18.74W SWING= 295. PHASE= 82. EMIS.ANG.= 13. CAM-RAD.= 4730.2 KM. SUN AZM= 69.1													
LAC 112 TYCHO,STUFLER : >1/2 MOON SPHERE : LAC 144 SCOTT,S.POLF NEAR SIDE >6 LAC 58 COPERNICUS,R													
L 4 1	124	43.035	14.08W	23	000	045059	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	2994K 4908197	99	4.8 20 -.
CAM-HAD.= 42.215 25.42W SWING= 297. PHASE= 82. EMIS.ANG.= 13. CAM-RAD.= 4733.2 KM. SUN AZM= 69.4													
EASTERN PART OF LAC 111 WILHELM,E : LAC 112 TYCHO,STO : SOUTHERN PART OF LAC 94 PITATUS,M.NUBIUM 6 LAC 126 CLAVIUS,MAGINUS													
L 4 2	126	42.67N	23.05W	23	000	055348	5-20-67	LUNAR ORB LO,F=80MM B&W	-	NONE	2477K 33462500	238	1.3 20 -.
CAM-HAD.= 43.94N 21.27W SWING= 53. PHASE= 68. EMIS.ANG.= 3. CAM-RAD.= 4416.2 KM. SUN AZM= 94.0													
LAC 58 COPERNICUS,REINHOLD : >1/2 MOON SPHERE : LAC 111 WILHELM,ELGER,MEE 6 LAC 10 BARRAGE,N.PR													
L 4 1	131	36.515	23.47W	24	000	165252	5-20-67	LUNAR ORB HI. 610MM B&W	-	NONE	2999K 4916393	52	5.0 20 -.
CAM-HAD.= 42.205 32.12W SWING= 291. PHASE= 83. EMIS.ANG.= 14. CAM-RAD.= 4738.2 KM. SUN AZM= 74.0													
LAC 111 WILHELM,ELGER,MEE : LAC 112 TYCHO,STUFLER : LAC 93 M.HUMOR,GASSENDI 6 LAC 94 PITATUS,M.NU													
L 4 1	136	42.655	27.40W	25	000	045435	5-21-67	LUNAR ORB HI. 610MM B&W	-	NONE	3003K 4922951	97	4.8 19 -.
CAM-HAD.= 42.165 38.84W SWING= 295. PHASE= 83. EMIS.ANG.= 13. CAM-RAD.= 4742.2 KM. SUN AZM= 70.3													
LAC 111 WILHELM,E : LAC 125 SCHILLER, : LAC 126 CLAVIUS,M : LAC 93 M.HUMOR,GASSENDI 6 LAC 94 PITATUS,M.NUB													
L 4 2	143	14.295	41.41W	26	000	172822	5-21-67	LUNAR ORB LO,F=80MM B&W	-	NONE	2719K 33987500	85	1.0 19 -.
CAM-HAD.= 14.415 42.98W SWING= 271. PHASE= 74. EMIS.ANG.= 3. CAM-RAD.= 4458.2 KM. SUN AZM= 84.3													
LAC 75 LETHBRIDGE,F : >1/2 MOON SPHERE : LAC 128 BIELA,WAT : LAC 23 RUMKER,SHARP 6 LAC 41 APENNINES,HAF													
L 4 2	149	15.055	48.76W	27	000	052940	5-22-67	LUNAR ORB LO,F=80MM B&W	-	NONE	2720K 34000000	127	.7 18 -.
CAM-HAD.= 14.905 49.64W SWING= 313. PHASE= 74. EMIS.ANG.= 2. CAM-RAD.= 4459.2 KM. SUN AZM= 84.4													
LAC 75 LETHBRIDGE,F : >1/2 MOON SPHERE : LAC 136 BAILLEY,K : LAC 38 SELEUCUS,SCHNOTER V. 6 LAC 25 CASSINI,ALPS													
L 4 2	161	15.135	61.98W	29	000	053134	5-23-67	LUNAR ORB LO,F=80MM B&W	-	NONE	2723K 34037500	129	.8 17 -.
CAM-HAD.= 14.365 62.94W SWING= 315. PHASE= 75. EMIS.ANG.= 2. CAM-RAD.= 4462.2 KM. SUN AZM= 84.7													
LAC 74 GRIMALDI,B : >1/2 MOON SPHERE : LAC 136 BAILLEY,K : LAC 22 SE.GERARD,BUNSEN,HARDING 6 LAC 58 COPERNICUS,RE													
L 4 2	168	14.445	68.18W	30	000	173229	5-23-67	LUNAR ORB LO,F=80MM B&W	-	NONE	2722K 34025000	103	.9 17 -.
CAM-HAD.= 14.145 69.56W SWING= 288. PHASE= 76. EMIS.ANG.= 2. CAM-RAD.= 4461.2 KM. SUN AZM= 84.9													
LAC 74 GRIMALDI,B : >1/2 MOON SPHERE : LAC 124 PHOCLIDE : LAC 22 SE.GERARD,BUNSEN,HARDING 6 LAC 57 KEPLER,FENCKE													
L 4 2	180	40.835	75.23W	32	000	170054	5-24-67	LUNAR ORB LO,F=80MM B&W	-	NONE	3009K 37612500	85	4.6 16 -.
CAM-HAD.= 41.995 85.86W SWING= 283. PHASE= 87. EMIS.ANG.= 13. CAM-RAD.= 4748.2 KM. SUN AZM= 74.6													
LAC 109 PIAZZI,V. BOUVARD : >1/2 MOON SPHERE : LAC 144 SCOTT,S.POLF NEAR SIDE >6 LAC 72 FLVEY NOBEL													
L 5 1	125	42.905	11.70W	55	000	041605	8-15-67	LUNAR ORB HI. 610MM B&W	-	NONE	220K 360656	185	5.5 9 -.
CAM-HAD.= 42.215 11.60W SWING= 89. PHASE= 79. EMIS.ANG.= 6. CAM-RAD.= 1959.2 KM. SUN AZM= 79.6													
S. W. PART OF LAC 112 TYCHO,STUFLER													

LAC 112 TYCHO, STUFLE

MIS SION	NA G	FR. PHOTO ROLL	PRIN. PT. OR LAT.	ORB LONG.	GET TIMES-HR M SEC (I=ESTIMATED)	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE	SCALE PRIN. PT.	AT AZ	LT ANG.	SUN ANG.	SIDE FWD. LAP
#	#	MAIN #													
L 5	2	125	42.89S	11.72W	55	000	041605	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	220K	2750000	187	5.4	9	-..
		CAM.NAD.=	42.20S	11.63W		SWING=	91.	PHASE= 79. EMIS.ANG.= 6.	CAM.RAD.=	1959.2 KM.		SUN	AZM= 79.6		
		S. n. PART OF		LAC 112 TYCHO,STOFER				6 S. E. PART OF LAC 111		WILHELM,FLGER,MFF					
L 5	1	126	42.32S	11.61W	55	000	041615	8-15-67 LUNAR ORB HI. 610MM B&W	- NONE	217K	355738	185	5.0	9	-..10
		CAM.NAD.=	41.70S	11.53W		SWING=	89.	PHASE= 79. EMIS.ANG.= 6.	CAM.RAD.=	1956.2 KM.		SUN	AZM= 79.7		
		S. n. PART OF		LAC 112 TYCHO,STOFER											
L 5	2	126	42.30S	11.63W	55	000	041615	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	217K	2712500	187	4.9	9	-..8R
		CAM.NAD.=	41.69S	11.53W		SWING=	91.	PHASE= 79. EMIS.ANG.= 5.	CAM.RAD.=	1956.2 KM.		SUN	AZM= 79.7		
		S. n. PART OF		LAC 112 TYCHO,STOFER				6 EASTERN PART OF LAC 111		WILHELM,FLGER,MFF					
L 5	1	127	41.72S	11.53W	55	000	041625	8-15-67 LUNAR ORB HI. 610MM B&W	- NONE	214K	350820	185	4.4	9	-..8
		CAM.NAD.=	41.18S	11.46W		SWING=	89.	PHASE= 79. EMIS.ANG.= 5.	CAM.RAD.=	1953.2 KM.		SUN	AZM= 79.7		
		WESTERN PART OF		LAC 112 TYCHO,STOFER											
L 5	2	127	41.71S	11.54W	55	000	041625	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	214K	2675000	187	4.4	9	-..8R
		CAM.NAD.=	41.17S	11.45W		SWING=	91.	PHASE= 79. EMIS.ANG.= 5.	CAM.RAD.=	1953.2 KM.		SUN	AZM= 79.7		
		WESTERN PART OF		LAC 112 TYCHO,STOFER				6 EASTERN PART OF LAC 111		WILHELM,FLGER,MFF					
L 5	1	128	41.12S	11.44W	55	000	041636	8-15-67 LUNAR ORB HI. 610MM B&W	- NONE	212K	347541	185	3.9	9	-..5
		CAM.NAD.=	40.64S	11.38W		SWING=	89.	PHASE= 79. EMIS.ANG.= 4.	CAM.RAD.=	1951.2 KM.		SUN	AZM= 79.7		
		WESTERN PART OF		LAC 112 TYCHO,STOFER											
L 5	2	128	41.11S	11.46W	55	000	041636	8-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	212K	2650000	187	3.9	9	-..8R
		CAM.NAD.=	40.64S	11.38W		SWING=	91.	PHASE= 79. EMIS.ANG.= 4.	CAM.RAD.=	1951.2 KM.		SUN	AZM= 79.7		
		WESTERN PART OF		LAC 112 TYCHO,STOFER				6 EASTERN PART OF LAC 111		WILHELM,FLGER,MFF					

TOTAL PHOTOS IN THIS GROUP = 28

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-1, (0), 1). OR(0) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
HSS=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	I	L	T	SUN	SIDE,
SIGN	ROLL	OR	LAT.	#	#	#	TIMES-HR	M	SEC	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.			
M	M	MAIN	LONG.				(ESTIMATED)			TYPE		M=N.HI	PT.	FR.	LAP					
												K=KM.			VERT					
L 4	1	76	42.77S	37.87E	15	***	043514	5-16-67	LUNAR ORB HI.	610MM B&W	-	NONE	2972K	4872131	97	4.5	22	-...		
CAM.NAD.= 42.21S 27.23E SWING= 296. PHASE= 79. EMIS.ANG.= 12. CAM.RAD.= 4711.2 KM. SUN AZM= 67.2																				
LAC 114 RHEITA, JANSSEN ; LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 127 HOMMEL, VLAC ; LAC 128 BIEIA, WATT																				
L 4	2	78	13.30N	30.21E	15	***	053813	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2722K	34025000	248	1.0	24	-76			
CAM.NAD.= 13.87N 31.68E SWING= 63. PHASE= 64. EMIS.ANG.= 3. CAM.RAD.= 4461.2 KM. SUN AZM= 95.4																				
LAC 61 TARUNTIUS, LYLE ; >1/2 MOON SPHERE ; LAC 13 ARISTOTE., ; LAC 62 M.UNDARUM, S. CRISIUM ; LAC 113 MAUROLYCUS																				
L 4	1	83	42.95S	32.82E	16	***	163652	5-16-67	LUNAR ORB HI.	610MM B&W	-	NONE	2972K	4872131	98	5.1	23	-...		
CAM.NAD.= 42.23S 20.71E SWING= 297. PHASE= 80. EMIS.ANG.= 14. CAM.RAD.= 4711.2 KM. SUN AZM= 66.3																				
LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 114 RHEITA, JA ; LAC 127 HOMMEL, VL ; LAC 128 BIEIA, WA ; LAC 96 ALTAI ; LAC 97 FRACA																				
L 4	2	83	42.94S	32.82E	16	***	163652	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2972K	37150000	98	5.1	23	-...			
CAM.NAD.= 42.23S 20.71E SWING= 297. PHASE= 80. EMIS.ANG.= 14. CAM.RAD.= 4711.2 KM. SUN AZM= 66.3																				
LAC 113 MAUROLYCUS, RAB. LEVI ; >1/2 MOON SPHERE ; LAC 78 THEOPHILUS ; LAC 116 M.AUSTRA ; LAC 140 SCHR ; LAC 60 J.CAE																				
L 4	2	84	15.18S	24.28E	16	***	170857	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2727K	34087500	124	.8	23	-...			
CAM.NAD.= 14.45S 23.18E SWING= 310. PHASE= 68. EMIS.ANG.= 2. CAM.RAD.= 4466.2 KM. SUN AZM= 82.8																				
LAC 78 THEOPHILUS ; >1/2 MOON SPHERE ; LAC 41 APENNINES, ; LAC 13 ARISTOTE., M.FRIG ; LAC 113 MAUROLYCUS, R																				
L 4	1	88	42.70S	24.94E	17	***	043838	5-17-67	LUNAR ORB HI.	610MM B&W	-	NONE	2973K	4873770	96	4.6	22	-...		
CAM.NAD.= 42.26S 14.18E SWING= 295. PHASE= 80. EMIS.ANG.= 13. CAM.RAD.= 4712.2 KM. SUN AZM= 67.8																				
LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 114 RHEITA, JA & EASTERN PART OF LAC 127 HOMMEL, VLAC																				
L 4	2	88	42.69S	24.94E	17	***	043838	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2973K	37162500	96	4.6	22	-...			
CAM.NAD.= 42.26S 14.18E SWING= 295. PHASE= 80. EMIS.ANG.= 13. CAM.RAD.= 4712.2 KM. SUN AZM= 67.8																				
LAC 113 MAUROLYCUS, RAB. LEVI ; >1/2 MOON SPHERE ; LAC 140 SCHRODING ; LAC 129 M.AUSTRA ; LAC 79 COLOM ; LAC 60 J.CAE																				
L 4	2	89	15.09S	16.90E	17	***	051044	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2724K	34050000	154	.5	22	-...			
CAM.NAD.= 14.45S 16.59E SWING= 340. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 4463.2 KM. SUN AZM= 83.2																				
LAC 78 THEOPHILUS ; >1/2 MOON SPHERE ; LAC 14 ENDYMION, S ; LAC 42 M.SERENITY, DAWES ; LAC 113 MAUROLYCUS, R																				

MIS SUN	HAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB MAIN	GET TIMES=HR M SEC (ESTIMATED)	GMT H	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE	SCALE PRIN.	AT PT.	T I L T ANG.	SUN SIDE, ANG.	FWD. LAP
L 4	1	95	42.54S	13.70E	18	00	0000 164033	5-17-67 LUNAR ORB HI. 610MM B&W	- NONE	2976K	4878689	95	4.7 22	-..	
CAM. RAD. = 42.27S 7.64E SWING = 294. PHASE = 80. EMIS. ANG. = 13. CAM. RAD. = 4715.2 KM. SUN AZM = 67.9															
WESTERN PART OF LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 127 HOMMEL, VL 6 LAC 128 RIFLA, WATT															
L 4	2	95	42.53S	18.70E	18	00	0000 164034	5-17-67 LUNAR ORB LO. F=80MM B&W	- NONE	2975K	37187500	95	4.7 22	-..	
CAM. RAD. = 42.27S 7.64E SWING = 294. PHASE = 80. EMIS. ANG. = 13. CAM. RAD. = 4714.2 KM. SUN AZM = 67.9															
LAC 113 MAUROLYCUS, RAB. LEVI ; W>1/2 MOON SPHERE ; LAC 140 SCHRODING ; LAC 129 M. AUSTRA ; LAC 78 THEOP 6 LAC 112 TYCH															
L 4	1	100	42.72S	12.29E	19	00	0000 044237	5-18-67 LUNAR ORB HI. 610MM B&W	- NONE	2976K	4881967	96	4.8 21	-..	
CAM. RAD. = 42.26S 1.05E SWING = 295. PHASE = 81. EMIS. ANG. = 13. CAM. RAD. = 4717.2 KM. SUN AZM = 68.0															
WESTERN PART OF LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 112 TYCHO, STO 6 LAC 127 HOMMEL, VLAC															
L 4	2	100	42.71S	12.29E	19	00	0000 044237	5-18-67 LUNAR ORB LO. F=80MM B&W	- NONE	2978K	37225000	96	4.8 21	-..	
CAM. RAD. = 42.26S 1.05E SWING = 295. PHASE = 81. EMIS. ANG. = 13. CAM. RAD. = 4717.2 KM. SUN AZM = 68.1															
LAC 113 MAUROLYCUS, RAB. LEVI ; W>1/2 MOON SPHERE ; LAC 140 SCHRODING ; LAC 129 M. AUSTRA ; LAC 77 PTOLM 6 LAC 80 LANGR															
L 4	1	112	42.58S	1.35W	21	00	0000 044650	5-19-67 LUNAR ORB HI. 610MM B&W	- NONE	2986K	4895082	95	4.6 20	-..	
CAM. RAD. = 42.26S 12.09W SWING = 294. PHASE = 81. EMIS. ANG. = 13. CAM. RAD. = 4725.2 KM. SUN AZM = 69.2															
LAC 112 TYCHO, STOFER ; LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 126 CLAVIUS, MAGINUS 6 LAC 127 HOMMEL, VLAC															
L 4	2	120	14.28S	15.64W	22	00	0000 172107	5-19-67 LUNAR ORB LO. F=80MM B&W	- NONE	2717K	33967500	77	5.5 20	-..	
CAM. RAD. = 14.46S 16.43W SWING = 263. PHASE = 71. EMIS. ANG. = 1. CAM. RAD. = 4456.2 KM. SUN AZM = 84.0															
LAC 76 HIPHALUS M ; W>1/2 MOON SPHERE ; LAC 126 CLAVIUS, M ; LAC 25 CASSINI, ALPS MTS 6 LAC 42 M. SERENITY, DA															
L 4	2	130	65.02S	25.85W	24	00	0000 161143	5-20-67 LUNAR ORB LO. F=80MM B&W	- NONE	3575K	44687500	46	4.1 9	-..	
CAM. RAD. = 71.62S 40.64W SWING = 211. PHASE = 91. EMIS. ANG. = 13. CAM. RAD. = 5314.2 KM. SUN AZM = 69.3															
LAC 137 NEWTON, HU ; W>1/2 MOON SPHERE ; LAC 131 PRANDTL ; LAC 93 M. HUMOR, GASSENDI 6 LAC 113 MAUROLYCUS, R															
L 5	2	54	27.72S	27.69E	30	00	0000 204537	8-11-67 LUNAR ORB LO. F=80MM B&W	- NONE	133K	1462500	227	57.8 10	-..	
CAM. RAD. = 22.61S 34.26E SWING = 111. PHASE = 33. EMIS. ANG. = 66. CAM. RAD. = 1872.2 KM. SUN AZM = 82.8															
S. E. PART OF LAC 96 ALTAI SCAR ; S. W. PART OF LAC 97 FRACASTORIUS, S. NECTAR 6 LAC 113 MAUROLYCUS, RAB. LEVI															

TOTAL PHOTOS IN THIS GROUP = 16

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN:      o = DEGRADED PHOTOS,      s = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ) , OR (O) = NO INFO      w = APPROXIMATELY      NEXT TO MAG. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS:      SW.A. = SUPER WIDE ANGLE LENS; EXTR=EXTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREH; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR 0 = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

HIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	H-DA-YR	CAMERA-LENS ON	FILM-EXPOSURE	ALT	SCALE AT	TILT	SUN SIDE,
SUN ROLL	OR	LAT.		"	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
#	#	MAIN	LONG.		(±ESTIMATED)			TYPE		M=N.MI	PT.	FR.	LAP
										K=KM.		VERT	%, %
L 5	2	44° 72.11S	69.06E	10	00	0000	154924	S-13-67 LUNAR ORB LO.F=80MM B&W	- NONE	3498K	43725000	106	3.0 9 -...
		CAM.NAD.= 71.27S	50.06E			SWING= 275.	PHASE= 89.	EMIS.ANG.= 9.	CAM.RAD.=	5237.2 KM.		SUN AZH= 59.6	
		LAC 139 HELMHOLTZ;				w>1/2 MOON SPHERE;	LUNAR S. HEMISPHE	LAC 141 HAYLEIGH				& LAC 114 RHEITA, JANSSEN	
L 4	1	52 42.91S	63.81E	11	00	0000	043024	S-14-67 LUNAR ORB HI. 610MM B&W	- NONE	2976K	4878A89	99	4.5 23 -...
		CAM.NAD.= 42.06S	53.33E			SWING= 297.	PHASE= 78.	EMIS.ANG.= 12.	CAM.RAD.=	4715.2 KM.		SUN AZH= 66.0	
		LAC 115 FURNERIUS, OKEN;				LAC 128 BIELA, WATT		LAC 129 M. AUSTRAL;	LAC 114 RHEITA, JA			SOUTHERN PART OF LAC 98 PETAVIUS, H	
L 4	1	59 41.75S	55.05E	12	00	0000	163122	S-14-67 LUNAR ORB HI. 610MM B&W	- NONE	2975K	4877N49	89	3.6 22 -...
		CAM.NAD.= 42.11S	46.79E			SWING= 287.	PHASE= 78.	EMIS.ANG.= 10.	CAM.RAD.=	4714.2 KM.		SUN AZH= 68.5	
		LAC 114 RHEITA, JA;				LAC 115 FURNERIUS;	LAC 128 BIELA, WAT	LAC 129 M. AUSTRAL, LYOT				& LAC 98 PETAVIUS, HOLD	
L 4	2	59° 41.75S	55.05E	12	00	0000	163122	S-14-67 LUNAR ORB LO.F=80MM B&W	- NONE	2975K	37187500	89	3.6 22 -...
		CAM.NAD.= 42.11S	46.79E			SWING= 287.	PHASE= 78.	EMIS.ANG.= 10.	CAM.RAD.=	4714.2 KM.		SUN AZH= 68.5	
		LAC 114 RHEITA, JA;				w>1/2 MOON SPHERE;	LUNAR E. HEMISPHE	LAC 140 SCHRUDINGER				& LAC 62 M. UNDARUM, S.C	
L 4	2	60° 13.58S	48.79E	12	00	0000	170326	S-14-67 LUNAR ORB LO.F=80MM B&W	- NONE	2738K	34225000	319	.7 23 -.90
		CAM.NAD.= 14.43S	49.54E			SWING= 195.	PHASE= 66.	EMIS.ANG.= 2.	CAM.RAD.=	4477.2 KM.		SUN AZH= 83.6	
		LAC 79 COLUMBO, NE;				w>1/2 MOON SPHERE;	LAC 27 GEMINUS, AT	LAC 44 CLEOMEDES, M. CHRIS.				& LAC 114 RHEITA, JANSSEN	
L 4	1	64 42.56S	50.55E	13	00	0000	043230	S-15-67 LUNAR ORB HI. 610MM B&W	- NONE	2973K	4873776	96	4.4 23 -...
		CAM.NAD.= 42.14S	40.27E			SWING= 294.	PHASE= 79.	EMIS.ANG.= 12.	CAM.RAD.=	4712.2 KM.		SUN AZH= 67.0	
		LAC 114 RHEITA, JA;				LAC 115 FURNERIUS;	LAC 128 BIELA, WAT	LAC 129 M. AUSTRAL, LYOT				& LAC 97 FRACASTORIUS,	
L 4	2	64S 42.56S	50.55E	13	00	0000	043230	S-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	2973K	37167500	96	4.4 23 -...
		CAM.NAD.= 42.14S	40.27E			SWING= 294.	PHASE= 79.	EMIS.ANG.= 12.	CAM.RAD.=	4712.2 KM.		SUN AZH= 67.0	
		DEGRADED NEGATIVE						& LAC 114 RHEITA, JANSSEN					
L 4	1	65 14.90S	43.30E	13	00	0000	050433	S-15-67 LUNAR ORB HI. 610MM B&W	- NONE	2735K	4483607	143	.4 24 -.49
		CAM.NAD.= 14.44S	42.95E			SWING= 329.	PHASE= 67.	EMIS.ANG.= 1.	CAM.RAD.=	4474.2 KM.		SUN AZH= 82.8	
		EASTERN PART OF LAC 79 COLUMBO, NE;				EASTERN PART OF LAC 97 FRACASTORIUS, S. NECTAR		& LAC 41 TARONTIUS, LYELL					
L 4	1	71 43.69S	46.67E	14	00	0000	163344	S-15-67 LUNAR ORB HI. 610MM B&W	- NONE	2972K	4872131	103	5.5 24 -...
		CAM.NAD.= 42.22S	33.74E			SWING= 301.	PHASE= 80.	EMIS.ANG.= 15.	CAM.RAD.=	4711.2 KM.		SUN AZH= 64.7	
		LAC 114 RHEITA, JA;				LAC 115 FURNERIUS;	LAC 128 BIELA, WAT	LAC 129 M. AUSTRAL, LYOT				& LAC 97 FRACASTORIUS,	



MIS SION	MAG ROLL	FR, PHOTO OR	PRIN. PT. LAT.	ORB #	GLT TIMES-HR M SEC	GMI (ESTIMATED)	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TUBE	SCALE AT PRIN. PT. M=NM, K=KM.	T AZ	L ANG.	T ANG.	SUN SIDE, ANG. FR. VERT	SUN SIDE, ANG. FR. VERT	SUN SIDE, ANG. FR. VERT
L 4	2	71° 43.68S	46.57E	14	000	000	163344	5-15-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2972K 37150000	103	5.5	24	-	90	
CAM.NAD.= 42.22S 33.74E SWING= 301. PHASE= 80. EMIS.ANG.= 15. CAM.RAD.= 4711.2 KM. SUN AZH= 64.7																	
LAC 114 RHEITA, JA : >1/2 MOON SPHERE : LAC 78 THEOPHILUS : LAC 79 COLOMBO, NE. M. NECTAR & LAC 144 SCOTT, S. POLE																	
L 4	1	72 15.77S	37.86E	14	000	000	170548	5-15-67 LUNAR ORB HI. 610MM B&W	-	NONE	2732K 4478699	131	1.2	24	-	47	
CAM.NAD.= 14.50S 36.35E SWING= 316. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4471.2 KM. SUN AZH= 82.2																	
WESTERN PART OF LAC 79 COLOMBO, NE : CENTRAL PART OF LAC 97 FRACASTORIUS, S. NECTAR & LAC 61 TARUNTIUS, LYELL																	
L 4	2	72 15.76S	37.86E	14	000	000	170548	5-15-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2732K 34150000	131	1.2	24	-	70	
CAM.NAD.= 14.50S 36.35E SWING= 316. PHASE= 68. EMIS.ANG.= 3. CAM.RAD.= 4471.2 KM. SUN AZH= 82.2																	
LAC 79 COLOMBO, NE : >1/2 MOON SPHERE : LAC 43 MACHOBIUS, : LAC 80 LANGRENUS, M. FERT. & LAC 114 RHEITA, JANS																	
L 4	2	73° 12.54N	37.59E	14	000	000	173646	5-15-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2727K 34087500	209	.9	25	-	00	
CAM.NAD.= 13.82N 38.33E SWING= 23. PHASE= 64. EMIS.ANG.= 2. CAM.RAD.= 4466.2 KM. SUN AZH= 95.4																	
DEGRADED NEGATIVE : LAC 61 TARUNTIUS, LYELL : >1/2 MOON SPHERE & LAC 114 RHEITA, JANS																	
L 4	2	74° 40.70N	45.57E	14	000	000	181009	5-15-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2970K 37125000	119	2.3	25	-	00	
CAM.NAD.= 42.75N 41.06E SWING= 283. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4709.2 KM. SUN AZH= 113.2																	
DEGRADED NEGATIVE : LAC 27 GEMINUS, AT : >1/2 MOON SPHERE : LAC 146 N. POLY FARSIDE IN ANSEN, N3 >80N & LAC 114 RHEITA, JANS																	
L 4	1	76 42.77S	37.87E	15	000	000	043514	5-16-67 LUNAR ORB HI. 610MM B&W	-	NONE	2972K 4872131	97	4.5	22	-	00	
CAM.NAD.= 42.21S 27.23E SWING= 296. PHASE= 79. EMIS.ANG.= 12. CAM.RAD.= 4711.2 KM. SUN AZH= 67.2																	
LAC 114 RHEITA, JANSSEN : LAC 113 MAUROLYCUS, RAB. LEVI : LAC 127 HOMMEL, VLACQ & LAC 128 BIELA, WATT																	
L 4	2	76° 42.77S	37.87E	15	000	000	043514	5-16-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2972K 37150000	97	4.5	22	-	00	
CAM.NAD.= 42.21S 27.23E SWING= 296. PHASE= 79. EMIS.ANG.= 12. CAM.RAD.= 4711.2 KM. SUN AZH= 67.2																	
LAC 114 RHEITA, JA : >1/2 MOON SPHERE : LAC 78 THEOPHILUS : LAC 112 TYCHO, STOFER & LAC 144 SCOTT, S. POLE																	
L 4	2	82 72.37S	32.46E	16	000	000	155638	5-16-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3503K 43787500	106	3.1	9	-	00	
CAM.NAD.= 71.62S 12.04E SWING= 273. PHASE= 90. EMIS.ANG.= 9. CAM.RAD.= 5242.2 KM. SUN AZH= 59.4																	
LAC 138 HANZINUS, : >1/2 MOON SPHERE : LAC 140 SCHRÖDING : LAC 131 PRANDTL PLANK & LAC 129 M. AUSTRAL, L																	
L 4	1	83 42.95S	32.82E	16	000	000	163652	5-16-67 LUNAR ORB HI. 610MM B&W	-	NONE	2972K 4872131	98	5.1	23	-	00	
CAM.NAD.= 42.23S 20.71E SWING= 297. PHASE= 80. EMIS.ANG.= 14. CAM.RAD.= 4711.2 KM. SUN AZH= 66.3																	
LAC 113 MAUROLYCUS, RAB. LEVI : LAC 114 RHEITA, JA : LAC 127 HOMMEL, VLACQ : LAC 128 BIELA, WA : LAC 96 ALTAI & LAC 97 FRACA																	
L 4	1	88 42.70S	24.94E	17	000	000	043838	5-17-67 LUNAR ORB HI. 610MM B&W	-	NONE	2973K 4873770	96	4.6	22	-	00	
CAM.NAD.= 42.26S 14.18E SWING= 295. PHASE= 80. EMIS.ANG.= 13. CAM.RAD.= 4712.2 KM. SUN AZH= 67.8																	
LAC 113 MAUROLYCUS, RAB. LEVI : LAC 114 RHEITA, JA & EASTERN PART OF LAC 127 HOMMEL, VLACQ																	
L 4	2	89 15.09S	16.90E	17	000	000	051044	5-17-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2724K 34050000	154	.5	22	-	00	
CAM.NAD.= 14.45S 16.59E SWING= 340. PHASE= 68. EMIS.ANG.= 1. CAM.RAD.= 4463.2 KM. SUN AZH= 83.2																	
LAC 78 THEOPHILUS : >1/2 MOON SPHERE : LAC 14 ENDYMION, S : LAC 42 M. SERENITY, DAVES & LAC 113 MAUROLYCUS, R																	
L 4	2	97° 12.97N	9.65E	18	000	000	174328	5-17-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2705K 33812500	245	1.4	22	-	50	
CAM.NAD.= 13.90N 11.76E SWING= 60. PHASE= 65. EMIS.ANG.= 4. CAM.RAD.= 4444.2 KM. SUN AZH= 94.7																	
LAC 59 M. VAPORUM, HYGINUS : >1/2 MOON SPHERE : LAC 12 PLATO, ALPI : LAC 80 LANGRENUS, M. FERT. & LAC 114 RHEITA, JA																	

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YH	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T	I	L	T	SUN	SIDE,
SUN	ROLL	ON	LAT.				TIMES-HR	M	SEC	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.			
"	"	MAIN	LONG.				(ESTIMATED)			TYPE		M=N.MI	PT.		FR.		LAP			
												K=KM.			VERT					
L 4	2	102	12.96N	3.63E	19	***	054527	5-18-67	LUNAR	ORB LO.F=80MM R6W	-	NONE	2499K	33737500	237	1.1	22	-	15	
		CAM.HAD.=	13.89N	5.19E			SWING=	53.	PHASE=	66.	EMIS.ANG.=	3.	CAM.RAD.=	4438.2	KM.		SUN	AZM=	94.7	
		LAC 59	M.VAPORUM, MYGJINUS																	
L 4	2	108	14.26S	2.36W	20	***	171651	5-18-67	LUNAR	ORB LO.F=80MM R6W	-	NONE	2719K	33987500	76	.5	21	-	12	
		CAM.HAD.=	14.95S	3.17W			SWING=	262.	PHASE=	70.	EMIS.ANG.=	1.	CAM.RAD.=	4458.2	KM.		SUN	AZM=	83.8	
		LAC 77	PIOLMAEUS, :																	
L 4	2	113	14.63S	9.51W	21	***	051900	5-19-67	LUNAR	ORB LO.F=80MM R6W	-	NONE	2718K	33975000	123	.2	20	-	00	
		CAM.HAD.=	14.95S	9.81W			SWING=	309.	PHASE=	70.	EMIS.ANG.=	1.	CAM.RAD.=	4457.2	KM.		SUN	AZM=	83.9	
		LAC 77	PIOLMAEUS, :																	
L 4	2	124	43.00S	14.08W	23	***	045059	5-20-67	LUNAR	ORB LO.F=80MM R6W	-	NONE	2994K	37425000	99	4.8	20	-	00	
		CAM.HAD.=	42.20S	25.42W			SWING=	297.	PHASE=	82.	EMIS.ANG.=	13.	CAM.RAD.=	4733.2	KM.		SUN	AZM=	69.4	
		LAC 111	WILHELM, E :																	
L 4	2	179	69.52S	74.07W	32	***	161924	5-24-67	LUNAR	ORB LO.F=80MM R6W	-	NONE	3592K	44900000	86	3.6	7	-	00	
		CAM.HAD.=	71.34S	96.22W			SWING=	246.	PHASE=	94.	EMIS.ANG.=	11.	CAM.RAD.=	5331.2	KM.		SUN	AZM=	68.2	
		LAC 136	GAILLET, K :																	
L 4	2	184	35.18S	69.32E	33	***	013032	5-25-67	LUNAR	ORB LO.F=80MM R6W	-	NONE	5790K	72374999	259	6.6	7	-	00	
		CAM.HAD.=	34.03S	47.52E			SWING=	269.	PHASE=	113.	EMIS.ANG.=	30.	CAM.RAD.=	7529.2	KM.		SUN	AZM=	275.8	
		LAC 115	FURNERUS, :																	
L 4	2	185	35.27S	69.30E	33	***	013036	5-25-67	LUNAR	ORB LO.F=80MM R6W	-	NONE	5790K	72374999	259	6.6	7	-	00	
		CAM.HAD.=	34.05S	47.52E			SWING=	269.	PHASE=	113.	EMIS.ANG.=	30.	CAM.RAD.=	7529.2	KM.		SUN	AZM=	275.9	
		LAC 115	FURNERUS, :																	
L 5	2	40	31.28S	51.94E	20	***	125148	8-10-67	LUNAR	ORB LO.F=80MM R6W	-	NONE	164K	20500000	110	10.3	17	-	00	
		CAM.HAD.=	30.93S	50.87E			SWING=	16.	PHASE=	83.	EMIS.ANG.=	11.	CAM.RAD.=	1903.2	KM.		SUN	AZM=	77.7	
		S. N. PART OF	LAC 98	PETAVIUS, HOLDEN																

TOTAL PHOTOS IN THIS GROUP = 29

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAG#, H=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
HSH=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
1/5 AS EXPOS SPEED = 1/1000 (OR \* = TWO ZENUS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

SUN	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T I L T	SUN SIDE
SHO	KULL	OR	LAT.	"	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
"	"	MAIN	LUNG.	"	(ESTIMATED)			TYPE		M=N.MI	PT.	FR.	LAP
										K=KM.		VERT	R. R
L 4	2	17° 14.25N	90.44E	6	***	0000	172957	S-11-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2739K	34237500	290 .7 28 -.84
CAM.NAD.= 13.89N 91.45E SWING= 104. PHASE= 60. EMIS.ANG.= 2. CAM.RAD.= 4478.2 KM. SUN AZH= 97.5													
LAC 64 NE.SHYIRII; W1/4 MOON SPHERE; LAC 115 FURNERIUS; LAC 80 LANGHENUS,M.FERT. & LAC 101 TSIOLKOVSKY													
L 4	1	27 15.22S	82.67E	7	***	0000	045932	S-12-67 LUNAR ORB HI. 610MM B&W	-	NONE	2747K	4503279	175 .6 26 -.44
CAM.NAD.= 14.35S 82.59E SWING= 0. PHASE= 64. EMIS.ANG.= 1. CAM.RAD.= 4486.2 KM. SUN AZH= 81.9													
CENTRAL PART OF LAC 81 ANDSGARIUS; EASTERN PART OF LAC 99 F MBOLT.GI; LAC 63 NEPER,SCHUBERT,N.S & LAC 115 FURNERIUS,OK													
L 4	1	38 42.64S	77.77E	9	***	0000	042846	S-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2982K	4885525	98 4.8 24 -.00
CAM.NAD.= 42.62S 66.45E SWING= 295. PHASE= 78. EMIS.ANG.= 13. CAM.RAD.= 4721.2 KM. SUN AZH= 64.8													
EASTERN PART OF LAC 115 FURNERIUS; LAC 129 M.AUSTRAL; LAC 116 M.AUSTRAL; LAC 99 HUMBOLT.GIBBS & LAC 98 PETAVIUS,													
L 4	2	38° 42.63S	77.77E	9	***	0000	042846	S-13-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2982K	37275000	98 4.8 24 -.00
CAM.NAD.= 42.01S 66.45E SWING= 295. PHASE= 78. EMIS.ANG.= 13. CAM.RAD.= 4721.2 KM. SUN AZH= 64.8													
LAC 115 FURNERIUS; W1/2 MOON SPHERE; LAC 140 SCHRODING; LAC 129 M.AUSTRAL,LYOT & LAC 80 LANGRENUS,M.F													
L 4	1	45° 42.42S	71.80E	10	***	0000	162932	S-13-67 LUNAR ORB HI. 610MM B&W	-	NONE	2979K	4883607	96 5.1 25 -.00
CAM.NAD.= 42.04S 59.88E SWING= 293. PHASE= 78. EMIS.ANG.= 14. CAM.RAD.= 4718.2 KM. SUN AZH= 64.7													
LAC 115 FURNERIUS; LAC 129 M.AUSTRAL,LYOT & S. E. PART OF LAC 98 PETAVIUS,HOLDEN													
L 4	2	45° 42.41S	71.80E	10	***	0000	162932	S-13-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2979K	37237500	96 5.1 25 -.00
CAM.NAD.= 42.04S 59.88E SWING= 293. PHASE= 78. EMIS.ANG.= 14. CAM.RAD.= 4718.2 KM. SUN AZH= 64.7													
DEGRADED NEGATIVE & LAC 115 FURNERIUS,OKEN													
L 4	1	52 42.91S	63.81E	11	***	0000	043024	S-14-67 LUNAR ORB HI. 610MM B&W	-	NONE	2976K	4878A89	99 4.5 23 -.00
CAM.NAD.= 42.06S 53.33E SWING= 297. PHASE= 78. EMIS.ANG.= 12. CAM.RAD.= 4715.2 KM. SUN AZH= 66.0													
LAC 115 FURNERIUS,OKEN; LAC 128 BIELA,WAT; LAC 129 M.AUSTRAL; LAC 114 RHEITA,JA & SOUTHERN PART OF LAC 98 PETAVIUS,H													
L 4	2	52 42.90S	63.80E	11	***	0000	043024	S-14-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2976K	37200000	99 4.5 23 -.00
CAM.NAD.= 42.06S 53.33E SWING= 297. PHASE= 78. EMIS.ANG.= 12. CAM.RAD.= 4715.2 KM. SUN AZH= 66.0													
LAC 115 FURNERIUS; W1/2 MOON SPHERE; LUNAR S. HEMISPHE; LAC 140 SCHRODINGER & LAC 79 COLOMBO,NE.M.													
L 4	1	59 41.75S	55.05E	12	***	0000	163122	S-14-67 LUNAR ORB HI. 610MM B&W	-	NONE	2975K	4877049	89 3.6 22 -.00
CAM.NAD.= 42.11S 46.79E SWING= 287. PHASE= 78. EMIS.ANG.= 10. CAM.RAD.= 4714.2 KM. SUN AZH= 68.5													
LAC 114 RHEITA,JA; LAC 115 FURNERIUS; LAC 128 BIELA,WAT; LAC 129 M.AUSTRAL,LYOT & LAC 98 PETAVIUS,HOLD													

MIS MAG		FR, PHOTO		PRIN, PT. URB		GET GMT		M-DA-YR		CAMERA-LENS OR		FILM-EXPOSURE		ALTI SCALE AT		T I L T		SUN SIDE,			
SION ROLL		OR		LAT.		#		TIMES-HR M SEC		SENSOR		AND FILTER		TUBE		PRIN.		AZ ANG. ANG. FWD.			
#	#	MAIN		LONG.		(ESTIMATED)				TYPE				M=N.MI		PT.		FR. LAP			
														K=KM.				VERT R. R			
L 4	1	64	42.505	50.55E	13	***	****	043230	5-15-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2973K	4873770	96	4.4	23	-.00		
		CAM. RAD.= 42.145		40.27E	SWING= 294.		PHASE= 79.		EMIS. ANG.= 12.		CAM. RAD.=		4712.2 KM.		SUN AZH= 67.0						
		LAC 114 RHEITA, JA		LAC 115 FURNERIUS		LAC 128 BIELA, WAT		LAC 129 M. AUSTRAL, LYOT						6		LAC 97 FRACASTORIUS,					
L 4	1	71	43.695	46.67E	14	***	****	163144	5-15-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2972K	4872131	103	5.5	24	-.00		
		CAM. RAD.= 42.225		33.74E	SWING= 301.		PHASE= 80.		EMIS. ANG.= 15.		CAM. RAD.=		4711.2 KM.		SUN AZH= 64.7						
		LAC 114 RHEITA, JA		LAC 115 FURNERIUS		LAC 128 BIELA, WAT		LAC 129 M. AUSTRAL, LYOT						6		LAC 97 FRACASTORIUS,					
L 4	2	154	71.705	33.52W	28	***	****	161555	5-22-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3413K	45162500	105	5.2	11	-.00		
		CAM. RAD.= 72.075		69.24W	SWING= 268.		PHASE= 94.		EMIS. ANG.= 16.		CAM. RAD.=		5352.2 KM.		SUN AZH= 52.2						
		LAC 137 NEPTUN, MO		W1/4 MOONS SPHERE		LAC 129 M. AUSTRAL		LAC 74 GRIMALDI, BILLY						6		LAC 93 M. HUMOR, GASS					
L 4	1	184	35.185	69.32E	33	***	****	013032	5-25-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5790K	9491803	259	6.6	7	-.00		
		CAM. RAD.= 34.035		97.52E	SWING= 269.		PHASE= 113.		EMIS. ANG.= 30.		CAM. RAD.=		7529.2 KM.		SUN AZH= 275.8						
		LAC 115 FURNERIUS, OKEN		W1/4 MOONS SPHERE		LAC 62 M. UNDAHUM, S. CRISIUM		LAC 63 NEPER, SCHURE													
L 4	2	184	35.185	69.32E	33	***	****	013032	5-25-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	5790K	72374999	259	6.6	7	-.00		
		CAM. RAD.= 34.035		97.52E	SWING= 269.		PHASE= 113.		EMIS. ANG.= 30.		CAM. RAD.=		7529.2 KM.		SUN AZH= 275.8						
		LAC 115 FURNERIUS		W1/2 MOON SPHERE		LAC 114 RHEITA, JA		LAC 61 TARUNTIUS, LYELL						6		LAC 44 CLEOMEDES, M.C					
L 4	1	185	35.275	69.30E	33	***	****	013036	5-25-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5790K	9491803	258	6.6	7	-.90		
		CAM. RAD.= 34.055		97.52E	SWING= 269.		PHASE= 113.		EMIS. ANG.= 30.		CAM. RAD.=		7529.2 KM.		SUN AZH= 275.9						
		LAC 115 FURNERIUS, OKEN		W1/4 MOONS SPHERE		LAC 62 M. UNDAHUM, S. CRISIUM		LAC 63 NEPER, SCHURE													
L 4	2	185	35.275	69.30E	33	***	****	013036	5-25-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	5790K	72374999	258	6.6	7	-.00		
		CAM. RAD.= 34.055		97.52E	SWING= 269.		PHASE= 113.		EMIS. ANG.= 30.		CAM. RAD.=		7529.2 KM.		SUN AZH= 275.9						
		LAC 115 FURNERIUS		W1/2 MOON SPHERE		LAC 114 RHEITA, JA		LAC 44 CLEOMEDES, M. CRIS.						6		LAC 129 M. AUSTRAL, L					

TOTAL PHOTOS IN THIS GROUP = 16

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-)(+)(.) ( ), OR(U) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: S.W.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUH= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NFG. AT PP IF ALT NOT 0.0

SUN	ROLL	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT?	SCALE	AT	T	I	L	T	SUN	SIDE
L 4	1	9	41.795	96.20E	6	***	****	162638	5-11-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2989K	49000000	91	4.2	25	-..		
CAM-NAU.= 42.025 86.28E SWING= 289. PHASE= 76. EMIS.ANG.= 12. CAM-RAD.= 4728.2 KM. SUN AZM= 65.1																					
LAC 116 M.AUSTRAL; LAC 99 HUMBOLT.GI; LAC 100 CURIE; LAC 129 M.AUSTRALE,LYOT & LAC 130 E.MAR AUSTRAL																					
L 4	2	9	41.795	96.20E	6	***	****	162638	5-11-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2989K	37362500	91	4.2	25	-..		
CAM-NAU.= 42.025 86.28E SWING= 289. PHASE= 76. EMIS.ANG.= 12. CAM-RAD.= 4728.2 KM. SUN AZM= 65.1																					
LAC 116 M.AUSTRAL; W>1/2 MOON SPHERE; LUNAR E. HEMISPHE; LAC 140 SCHRODINGER & LAC 63 NEPER,SCHURER																					
L 4	1	10	41.425	96.19E	6	***	****	162648	5-11-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2987K	4896721	89	4.3	25	-.90		
CAM-NAU.= 41.885 86.30E SWING= 287. PHASE= 76. EMIS.ANG.= 12. CAM-RAD.= 4726.2 KM. SUN AZM= 65.2																					
LAC 116 M.AUSTRAL; LAC 99 HUMBOLT.GI; LAC 100 CURIE; LAC 129 M.AUSTRALE,LYOT & LAC 130 E.MAR AUSTRAL																					
L 4	2	10	41.415	96.20E	6	***	****	162648	5-11-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2987K	37337500	89	4.3	25	-.90		
CAM-NAU.= 41.885 86.30E SWING= 287. PHASE= 76. EMIS.ANG.= 12. CAM-RAD.= 4726.2 KM. SUN AZM= 65.2																					
LAC 116 M.AUSTRAL; W>1/2 MOON SPHERE; LUNAR E. HEMISPHE; LAC 140 SCHRODINGER & LAC 61 ANSGARIUS,W.M																					
L 4	1	11	41.045	96.19E	6	***	****	162658	5-11-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2986K	4895002	87	4.3	25	-.90		
CAM-NAU.= 41.745 86.32E SWING= 285. PHASE= 76. EMIS.ANG.= 12. CAM-RAD.= 4725.2 KM. SUN AZM= 65.4																					
LAC 116 M.AUSTRAL; LAC 99 HUMBOLT.GI; LAC 100 CURIE; LAC 129 M.AUSTRALE,LYOT & LAC 130 E.MAR AUSTRAL																					
L 4	2	11	41.045	96.20E	6	***	****	162658	5-11-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2986K	37325000	87	4.3	25	-.90		
CAM-NAU.= 41.745 86.32E SWING= 285. PHASE= 76. EMIS.ANG.= 12. CAM-RAD.= 4725.2 KM. SUN AZM= 65.4																					
LAC 116 M.AUSTRAL; W>1/2 MOON SPHERE; LUNAR E. HEMISPHE; LAC 140 SCHRODINGER & LAC 63 NEPER,SCHURER																					
L 4	1	12	40.675	96.18E	6	***	****	162708	5-11-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2984K	4891803	86	4.3	25	-.90		
CAM-NAU.= 41.615 86.34E SWING= 283. PHASE= 76. EMIS.ANG.= 12. CAM-RAD.= 4723.2 KM. SUN AZM= 65.6																					
LAC 116 M.AUSTRAL; LAC 99 HUMBOLT.GI; LAC 100 CURIE; LAC 129 M.AUSTRALE,LYOT & LAC 130 E.MAR AUSTRAL																					
L 4	2	12	40.675	96.19E	6	***	****	162708	5-11-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2984K	37300000	86	4.3	25	-.90		
CAM-NAU.= 41.615 86.34E SWING= 283. PHASE= 76. EMIS.ANG.= 12. CAM-RAD.= 4723.2 KM. SUN AZM= 65.6																					
LAC 116 M.AUSTRAL; W>1/2 MOON SPHERE; LUNAR E. HEMISPHE; LAC 140 SCHRODINGER & LAC 63 NEPER,SCHURER																					
L 4	1	335	41.845	84.13E	8	***	****	162801	5-12-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2985K	4893443	92	4.7	25	-..		
CAM-NAU.= 42.025 73.04E SWING= 289. PHASE= 77. EMIS.ANG.= 13. CAM-RAD.= 4724.2 KM. SUN AZM= 64.9																					
DEGRADED NEGATIVE; LAC 116 M.AUSTRALE,JENNER; SOUTHERN PART OF LAC 99 HUMBOLT.GI & EASTERN PART OF LAC 129 M.AUSTRALE																					

HIS SION	MAG ROLL	FR. PHOTO OR #	PRIN. PT. LAT. MAIN	ORB LONG.	GET TIMES-HR (ESTIMATED)	GHT H SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDF M=N, MI K=KM.	SCALE AT		FIL T		SUN SIDE,	
											PRIN. PT.	AZ	ANG. FR.	ANG. VERT	FWO. LAT	
L 4	2	335	41.84S	64.12E	B ***	162801	5-12-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2985K	37312500	92	4.7	25	-.00
		CAM. RAD.= 42.02S		73.04E	SWING= 289.		PHASE= 77. EMIS. ANG.= 13.		CAM. RAD.= 4724.2 KM.		SUN AZH= 64.9					
DEGRADED NEGATIVE & LAC 116 M.AUSTRALE, JENNER																
L 4	1	38	42.04S	77.77E	9 ***	042846	5-13-67	LUNAR ORB HI. 610MM B&W	-	NONE	2982K	4888525	98	4.8	24	-.00
		CAM. RAD.= 42.02S		66.45E	SWING= 295.		PHASE= 78. EMIS. ANG.= 13.		CAM. RAD.= 4721.2 KM.		SUN AZH= 64.8					
EASTERN PART OF LAC 115 FURNEIUS; LAC 129 M.AUSTRALE; LAC 116 M.AUSTRALE; LAC 99 HUMBOIT, GIBBS & LAC 98 PETAVIUS,																
L 4	2	535	14.81S	56.82E	11 ***	050229	5-14-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2740K	34250000	122	.5	25	-.54
		CAM. RAD.= 14.41S		56.14E	SWING= 308.		PHASE= 66. EMIS. ANG.= 1.		CAM. RAD.= 4479.2 KM.		SUN AZH= 82.4					
DEGRADED NEGATIVE; LAC 80 LANGRENUS; LAC 44 CLEOMEDES; LAC 128 HIELA, WATT & LAC 64 NF. SMYTHII HF																
L 4	2	83	42.94S	32.82E	16 ***	163652	5-16-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2972K	37150000	98	5.1	23	-.00
		CAM. RAD.= 42.23S		20.71E	SWING= 297.		PHASE= 80. EMIS. ANG.= 14.		CAM. RAD.= 4711.2 KM.		SUN AZH= 66.3					
LAC 113 MAURULTUS, KAB. LEV. > 1/2 MOON SPHERE; LAC 78 THEOPHILUS; LAC 116 M.AUSTRALE; LAC 140 SCHR & LAC 60 J. CAE																
L 4	2	112	42.57S	1.35W	21 ***	044650	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2986K	37325000	95	4.6	20	-.00
		CAM. RAD.= 42.26S		12.09W	SWING= 294.		PHASE= 81. EMIS. ANG.= 13.		CAM. RAD.= 4725.2 KM.		SUN AZH= 69.2					
LAC 112 IYCHO, STOFER > 1/2 MOON SPHERE; LAC 144 SCOTT, S. POLF NEARSIDE > 6 LAC 76 RIPHAELUS MT.																
L 4	2	118	72.49S	6.49W	22 ***	160805	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3555K	44437500	107	3.0	8	-.00
		CAM. RAD.= 71.67S		26.89W	SWING= 275.		PHASE= 72. EMIS. ANG.= 9.		CAM. RAD.= 5294.2 KM.		SUN AZH= 62.0					
LAC 137 NEPTUN, MU > 1/2 MOON SPHERE; LAC 131 PRANITL & LAC 116 M.AUSTRALE, JENNER & LAC 94 PITATUS, M. NUR																
L 4	1	178	33.87S	82.21E	32 ***	132933	5-24-67	LUNAR ORB HI. 610MM B&W	-	NONE	5796K	9501639	264	5.3	2	-.00
		CAM. RAD.= 33.98S		104.14E	SWING= 275.		PHASE= 112. EMIS. ANG.= 23.		CAM. RAD.= 7535.2 KM.		SUN AZH= 271.9					
LAC 116 M.AUSTRALE, JENNER > 1/4 MOONS SPHERE; LAC 63 NEPER, SCHUBERT, N. SMYTHI & LAC 99 HUMROLT, GIBB																
L 4	2	178	33.88S	82.20E	32 ***	132933	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	5796K	72449999	264	5.3	2	-.00
		CAM. RAD.= 33.78S		104.14E	SWING= 275.		PHASE= 112. EMIS. ANG.= 23.		CAM. RAD.= 7535.2 KM.		SUN AZH= 271.9					
LAC 116 M.AUSTRALE, JENNER > 1/2 MOON SPHERE; LAC 97 FRACASTORIUS, S. NE & LAC 131 PRANDTL PLANK & LAC 41 ANTARCH, H																

TOTAL PHOTOS IN THIS GROUP \* 17

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAG#. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: S.W.A. = SUPER WIDE ANGLE LENS; EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; 2P,2B,2S = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT D.O

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	H-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE,
SUN	ROLL	OR	LAT.	#	TIMES-HH M SEC					SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FND.
#	#	MAIN	LONG.	(#ESTIMATED)						TYPE		M=N,M1	PT.	FR.	LAP		
		#										K=KM.	VERT	%	%		
L 1	2	102	14.68S 104.35E	60	***	163624	8-23-66	LUNAR ORB	LO.F=80MM B&W	-	NONE	1198K	14975000	258	35.7	69	-..
			CAM.NAD.= 9.76S 150.38E		SWING= 254.	PHASE= 95.	EMIS.ANG.= 81.	CAM.RAD.=	2937.2 KM.						SUN AZH=318.3		
			LAC 82 SE.N.SMYTH ;		LUNAR DISC FARSID ;	LAC 101 TSIOLKOV5 ;	LAC 83 LANGEMAK								6	LAC 117 VAN DER WAAL	
L 3	1	121	24.15S 126.59E	74	***	172200	2-19-67	LUNAR ORB	HI. 610MM B&W	-	NONE	1463K	2398361	182	12.7	20	-..
			CAM.NAD.= 12.92S 127.09E		SWING= 184.	PHASE= 70.	EMIS.ANG.= 24.	CAM.RAD.=	3202.2 KM.						SUN AZH=277.5		
			EASTERN PART OF LAC 101 TSIOLKOVSKY				S. E. PART OF LAC 83 LANGEMAK								N. F. PART OF LAC 117 VAN DER WAA		
L 4	1	9	41.79S 76.20E	6	***	162638	5-11-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2989K	4900000	91	4.2	25	-..
			CAM.NAD.= 42.02S 86.28E		SWING= 289.	PHASE= 76.	EMIS.ANG.= 12.	CAM.RAD.=	4728.2 KM.						SUN AZH= 65.1		
			LAC 116 M.AUSIRAL ;		LAC 99 HUMBULT.GI ;	LAC 100 CURIE	LAC 129 M.AUSTRALE,LYOT								6	LAC 130 F.MAR AUSTRA	
L 4	1	10	41.42S 76.19E	6	***	162648	5-11-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2987K	4896771	89	4.3	25	-..
			CAM.NAD.= 41.88S 86.30E		SWING= 287.	PHASE= 76.	EMIS.ANG.= 12.	CAM.RAD.=	4726.2 KM.						SUN AZH= 65.2		
			LAC 116 M.AUSIRAL ;		LAC 99 HUMBULT.GI ;	LAC 100 CURIE	LAC 129 M.AUSTRALE,LYOT								6	LAC 130 E.MAR AUSTRA	
L 4	1	11	41.04S 76.19E	6	***	162658	5-11-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2986K	4895082	87	4.3	25	-..
			CAM.NAD.= 41.74S 86.32E		SWING= 285.	PHASE= 76.	EMIS.ANG.= 12.	CAM.RAD.=	4725.2 KM.						SUN AZH= 65.4		
			LAC 116 M.AUSIRAL ;		LAC 99 HUMBULT.GI ;	LAC 100 CURIE	LAC 129 M.AUSTRALE,LYOT								6	LAC 130 F.MAR AUSTRA	
L 4	1	12	40.67S 76.18E	6	***	162708	5-11-67	LUNAR ORB	HI. 610MM B&W	-	NONE	2984K	4891803	86	4.3	25	-..
			CAM.NAD.= 41.61S 86.34E		SWING= 283.	PHASE= 76.	EMIS.ANG.= 12.	CAM.RAD.=	4723.2 KM.						SUN AZH= 65.6		
			LAC 116 M.AUSIRAL ;		LAC 99 HUMBULT.GI ;	LAC 100 CURIE	LAC 129 M.AUSTRALE,LYOT								6	LAC 130 E.MAR AUSTRA	

TOTAL PHOTOS IN THIS GROUP = 6

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
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 (-), (.), ( ), (O) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS (PLANAR, BIOGEN, SONAR); FOCAL LENGTH (MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT D.U

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T	I	L	T	SUN	SIDE
SION	ROLL	OR	LAT.	#	TIMES-HR	M	SEC			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	F&D.			
#	#	MAIN	LONG.	(#=ESTIMATED)						TYPE		M=N.MI	PT.	FR.	LAP					
												K=KM.	VERT							
L 4	2	99°	J.51N 179.92E	18	***	****	232421	5-17-67	LUNAR	ORB	LO.F=80MM R6#	-	NONE	6142K	76774999	293	2.4	**	-	**
		CAM.NAD.=	.11N 172.38W		SWING=	294.		PHASE=	115.	EMIS=ANG.=	11.	CAM.RAD.=	7981.2	KM.	SUN	AZM=	271.5			
		LAC 68	SHARONOV		W>1/2	MOON	SPHERE		LAC 118	JULES VER					6	LAC 18	TIKHOV			

TOTAL PHOTOS IN THIS GROUP = 1



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 (-), (+), ( ) , OR (0) = NO INFO      W = APPROXIMATELY      NEXT TO MAG#, B=BACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS:      SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTRAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREN; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

HIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T	I	L	T	SUN	SIDE.
SION	ROLL	OR	LAT.	#	TIMES-HR	M	SEC			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.			
#	#	MAIN	LONG.	(#ESTIMATED)						TYPE		M=N.MI	PT.	FR.	LAP					
		#										K*KM.		VERT	S.	X				
L 4	Z	130	65.02S	25.85W	24	*****	161143	5-20-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	3575K	44687500	46	4.1	9	-.	..	
CAM.NAD.= 71.62S 40.64W SWING= 211. PHASE= 91. EMIS.ANG.= 13. CAM.RAD.= 5314.2 KM. SUN A/M= 69.3																				
LAC 137 NEUTON, MO : 1/4 MOONS SPHERE : LAC 119 THOMPSON, : LAC 93 M.HUMOR, GASSENDI & LAC 113 MAUROLYCUS, R																				

TOTAL PHOTOS IN THIS GROUP = 1

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS,  
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 (-),(+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREH; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 12 = AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.HFG. AT PP IF ALT NO. 0.0

MIS	MAG	FR, PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	TILT	SUN SIDE,
SIGN	ROLL	OR	LAT.	#	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
#	#	MAIN	LONG.	(#ESTIMATED)				TYPE		M=N.MI	PT.	FR.	LAP
										K=KM.		VERT	X, Y
L 5	1	30	25.77S	139.29W	10	00	024335	8-09-67	LUNAR ORB HI, 610MM B&W	-	NONE	5069K	8309836 261 9.6 7 -...
			CAM-NAO= 25.33S	134.79W			SWING= 92.	PHASE= 124.	EMIS-ANG.= 41.	CAM-RAD.=	6808.2 KM.	SUN AZH=279.9	
			LAC 106 MAHLITE				W1/4 MOONS SPHERE	LAC 70 H.W.HERTZS	LAC 69 ENGLEHARDT				& LAC 121 APOLLO
L 5	1	65	48.87S	168.65W	35	00	114922	8-12-67	LUNAR ORB HI, 610MM B&W	-	NONE	1192K	1954098 246 19.9 ** -...
			CAM-NAO= 44.71S	147.27W			SWING= 82.	PHASE= 128.	EMIS-ANG.= 35.	CAM-RAD.=	2931.2 KM.	SUN AZH=268.1	
			DEGRADED NEGATIVE				N. W. PART OF LAC 133 LEHAITRE	N. E. PART OF LAC 132	ABBE,HESS				& LAC 120 OPPENHEIMER
L 5	2	65	48.77S	168.61W	35	00	114922	8-12-67	LUNAR ORB LO, F=80MM B&W	-	NONE	1192K	14900000 246 19.9 ** -...
			CAM-NAO= 44.72S	147.27W			SWING= 83.	PHASE= 128.	EMIS-ANG.= 35.	CAM-RAD.=	2931.2 KM.	SUN AZH=268.0	
			LAC 133 LEHAITRE				W1/4 MOONS SPHERE	LAC 121 APOLLO	LAC 120 OPPENHEIMER				& LAC 132 ABBE,HESS

TOTAL PHOTOS IN THIS GROUP = 3

REPRODUCIBILITY OF THE  
 ORIGINAL PAC IS POOR

121 LAC 121 APOLLO

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
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 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAG#, R=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; 2P, 2B, 2S = ZEISS LENS(PLANAR, BIOGEN, SONAR); FOCAL L.NGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR 0 = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG #	FR. OR	PHOTO LAT.	PHIN. LONG.	PT. #	ORB #	GET TIMES-HR	GMT M SEC	H-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=H.MI K=KM.	SCALE AT PRIN. PT.	TILT AZ	SUN SIDE ANG. ANG.	FWD. LAP R. R	
L 5	1	30	25.795	134.29W	10	000	024335	024335	8-09-67	LUNAR ORB HI. 610MM B&W	- NONE	5069K	8309816	241	9.6	7	-..
CAM.NAD.= 25.335 104.74W SWING= 92. PHASE= 124. EMIS.ANG.= 41. CAM.RAD.= 6808.2 KM. SUN AZH=274.9																	
LAC 106 MARIOTTE ; 1/4 MOONS SPHERE ; LAC 70 N.W.HERTZS ; LAC 69 ENGLEHARDT																	
L 5	2	31	26.04N	135.71W	11	000	093219	093219	8-09-67	LUNAR ORB LO.F=80MM B&W	- NONE	1364K	17050000	280	21.8	2	-..
CAM.NAD.= 26.12N 113.59W SWING= 89. PHASE= 130. EMIS.ANG.= 42. CAM.RAD.= 3103.2 KM. SUN AZH=270.8																	
LAC 52 JOULE E.NA ; 1/4 MOONS SPHERE ; LUNAR W. HEMISPHE ; LAC 122 LANGMUIR STETSON																	
L 5	1	43	47.53S	151.45W	25	000	035821	035821	8-11-67	LUNAR ORB HI. 610MM B&W	- NONE	1191K	1952459	252	20.2	00	-..
CAM.NAD.= 44.89S 129.44W SWING= 90. PHASE= 130. EMIS.ANG.= 36. CAM.RAD.= 2930.2 KM. SUN AZH=267.4																	
DEGRADED NEGATIVE ; SOUTHERN PART OF LAC 121 APOLLO & NORTHERN PART OF LAC 133 LEMAITRE																	
L 5	2	43	47.43S	151.42W	25	000	035821	035821	8-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	1191K	14487500	252	20.2	00	-..
CAM.NAD.= 44.90S 129.44W SWING= 91. PHASE= 130. EMIS.ANG.= 36. CAM.RAD.= 2930.2 KM. SUN AZH=267.4																	
LAC 121 APOLLO ; 1/4 MOONS SPHERE ; LIMB OR HORIZON ; LAC 106 MARIOTTE																	
L 5	2	65	48.77S	160.61W	35	000	114922	114922	8-12-67	LUNAR ORB LO.F=80MM B&W	- NONE	1192K	14900000	246	19.9	00	-..
CAM.NAD.= 44.72S 147.27W SWING= 83. PHASE= 128. EMIS.ANG.= 35. CAM.RAD.= 2931.2 KM. SUN AZH=268.0																	
LAC 133 LEMAITRE ; 1/4 MOONS SPHERE ; LAC 121 APOLLO ; LAC 120 OPPENHEIMER																	

TOTAL PHOTOS IN THIS GROUP = 5

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN. R=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: S.W.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAH 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; ZP,Zu,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER X AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS MAG		FR,PHOTO	PRIN,PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDF.					
SION ROLL	OR	LAT.	N	TIMES-HR M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.		
#	#	MAIN	LONG.	(I=ESTIMATED)				TYPE		M=N,M1	PT.	FR.	LAP				
										K=KM.	VERT	S.	S				
L 5	Z	31	28.04N	135.71W	11	00	93219	8-09-67	LUNAR ORB LO.F=80MM R&W	-	NONE	1364K	17050000	2RD	71.9	Z	-..
		CAM-RAD.= 26.12H		113.59W	S...	89.	PHASE= 130.		EMIS-ANG.= 42.	CAM-RAD.=		3103.2 KM.	SUN AZM=270.8				
LAC 52 JUDLE E.MA ; 1/4 MOONS SPHERE ; LUNAR W. HEMISPHE ; LAC 122 LANGMUIR STETSON																	
6 LAC 121 APOLLO																	

TOTAL PHOTOS IN THIS GROUP = 1

THESE TWO SYMBOLS NEXT TO MAIN OF PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-),(+), ( ), OR(U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. R-BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SWA = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
HSH= HASSLEBLAD; MAUR= MAUREN; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIUGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
10 = AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

NIS SION #	MAG #	FR. PHOTO OR MAIN	PRIN. LAT. LONG.	PRIN. PT. ORB #	GET TIMES-HR	GHT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=H.M.I K=KM.	SCALE AT PRIN. PT.	I 1 AZ	I 1 ANG.	I 1 ANG.	SIDE FWD. LAP R, R	
																(I=ESTIMATED)
L 4	2	182	15.26N 81.42W	32	***	0000	180342	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2474K	33425000	329	1.0 16	-66
CAM.HAD.= 13.88N 80.57W SWING= 143. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4413.2 KM. SUN AZM= 93.7																
LAC 55 VASCOUEGAN ; W>1/2 MOON SPHERE ; LAC 123 STEKLOV ; LAC 21 N.GERARD,BOULE 6 LAC 24 SINUS IRIDUM																
L 4	1	166	42.27S 81.34W	33	***	0000	050123	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	3006K	4927869	95	4.7 16	-..
CAM.HAD.= 41.96S 92.48W SWING= 293. PHASE= 87. EMIS.ANG.= 13. CAM.RAD.= 4745.2 KM. SUN AZM= 74.2																
LAC 109 PIAZZI,V.BOUVARD ; LAC 135 PINGRE N.HAUSEN ; LAC 124 PHOCLIDES 6 LAC 123 STEKLOV																
L 4	2	188	13.39N 89.22W	33	***	0000	060409	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2475K	33437500	265	1.3 15	-78
CAM.HAD.= 13.92N 87.19W SWING= 69. PHASE= 72. EMIS.ANG.= 3. CAM.RAD.= 4414.2 KM. SUN AZM= 92.7																
LAC 55 VASCOUEGAN ; W>1/2 MOON SPHERE ; LAC 123 STEKLOV ; LAC 21 N.GERARD,BOULE 6 LAC 24 SINUS IRIDUM																
L 4	1	193	63.89S 85.97W	34	***	0000	162428	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	3519K	5768852	70	4.8 9	-..
CAM.HAD.= 68.87S 107.44W SWING= 232. PHASE= 95. EMIS.ANG.= 15. CAM.RAD.= 5258.2 KM. SUN AZM= 68.6																
LAC 135 PINGRE N.HAUSEN ; LAC 124 PHOCLIDE ; LAC 109 PIAZZI,V. ; LAC 123 STEKLOV ; LAC 143 S.HA A. LAC 136 BAIL																
L 4	1	194	42.97S 86.50W	34	***	0000	170147	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	3003K	4927951	100	5.3 16	-90
CAM.HAD.= 42.01S 99.09W SWING= 297. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 4742.2 KM. SUN AZM= 73.3																
LAC 123 STEKLOV ; LAC 109 PIAZZI,V.BOUVARD ; LAC 135 PINGRE N.HAUSEN 6 LAC 124 PHOCLIDES																
L 4	2	194	42.97S 86.51W	34	***	0000	170147	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3003K	37517500	100	5.3 16	-..
CAM.HAD.= 42.01S 99.09W SWING= 297. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 4742.2 KM. SUN AZM= 73.3																
UNGRADED NEGATIVE ; LAC 123 STEKLOV ; W>1/2 MOON SPHERE ; LAC 134 HOLTZMANN 6 LAC 90 LOWELL																
L 5	1	13	14.32N 102.90W	2	***	0000	133325	8-06-67	LUNAR ORB HI. 610MM B&W	-	NONE	5755K	9434476	279	7.6 3	-..
CAM.HAD.= 11.15N 74.61W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7494.2 KM. SUN AZM= 270.8																
LAC 72 ELVEY MODEL ; W1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU 6 LAC 123 STEKLOV																
L 5	1	14	14.27N 102.39W	2	***	0000	133328	8-06-67	LUNAR ORB HI. 610MM B&W	-	NONE	5756K	9436066	279	7.6 3	-90
CAM.HAD.= 11.14N 74.61W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7495.2 KM. SUN AZM= 270.8																
LAC 72 ELVEY MODEL ; W1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU 6 LAC 123 STEKLOV																
L 5	1	15	14.23N 102.38W	2	***	0000	133330	8-06-67	LUNAR ORB HI. 610MM B&W	-	NONE	5756K	9436066	279	7.6 3	-90
CAM.HAD.= 11.13N 74.61W SWING= 92. PHASE= 122. EMIS.ANG.= 35. CAM.RAD.= 7495.2 KM. SUN AZM= 270.8																
LAC 72 ELVEY MODEL ; W1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU 6 LAC 123 STEKLOV																

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDE.
SUN HULL	OR	LAT.	"	"	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
"	"	MAIN	LONG.	"	(ESTIMATED)			TYPE		M=N,M1	PT.	FR.	LAP
"	"	"	"	"	"	"	"	"	"	K=KM.	VERT	"	"
L 5	1	16	14.18N	102.37W	2	00.00.00	133333	8-06-67	LUNAR ORB HI. 610MM B&W	-	NONE	5757K	9437705 279 7.6 3 -.90
CAM-NAD.= 11.12N 74.60W SWING= 92. PHASE= 122. EMIS-ANG.= 35.													
LAC 72 ELVEY NOBEL ; 1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU													
6 LAC 123 STEKLOV													
L 5	1	17	14.13N	102.36W	2	00.00.00	133336	8-06-67	LUNAR ORB HI. 610MM B&W	-	NONE	5757K	9437705 279 7.6 3 -.90
CAM-NAD.= 11.11N 74.60W SWING= 92. PHASE= 122. EMIS-ANG.= 35.													
LAC 72 ELVEY NOBEL ; 1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU													
6 LAC 123 STEKLOV													
L 5	1	18	14.09N	102.35W	2	00.00.00	133338	8-06-67	LUNAR ORB HI. 610MM B&W	-	NONE	5758K	9439344 279 7.6 3 -.90
CAM-NAD.= 11.10N 74.60W SWING= 92. PHASE= 122. EMIS-ANG.= 35.													
LAC 72 ELVEY NOBEL ; 1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU													
6 LAC 123 STEKLOV													
L 5	1	19	14.04N	102.34W	2	00.00.00	133341	8-06-67	LUNAR ORB HI. 610MM B&W	-	NONE	5758K	9439344 279 7.6 3 -.90
CAM-NAD.= 11.09N 74.60W SWING= 92. PHASE= 122. EMIS-ANG.= 35.													
LAC 72 ELVEY NOBEL ; 1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU													
6 LAC 123 STEKLOV													
L 5	1	20	14.00N	102.33W	2	00.00.00	133344	8-06-67	LUNAR ORB HI. 610MM B&W	-	NONE	5758K	9439344 279 7.6 3 -.90
CAM-NAD.= 11.08N 74.60W SWING= 92. PHASE= 122. EMIS-ANG.= 35.													
LAC 72 ELVEY NOBEL ; 1/4 MOONS SPHERE ; LAC 20 COULOMB ; LAC 35 LANDAU													
6 LAC 123 STEKLOV													
L 5	2	21	85.28S	168.60W	3	00.00.00	171706	8-06-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3341K	41762500 187 16.7 3 -.00
CAM-NAD.= 50.72S 69.07W SWING= 26. PHASE= 119. EMIS-ANG.= 57.													
LAC 145 S.POLE FAR SIDE; AMUNDSEN >80 ; LUNAR DISC FAR SIDE ; LUNAR S. HEMISPHE ; LAC 140 SCHRODIN ; LAC 123 STEK & LAC 108 H. OR													

TOTAL PHOTOS IN THIS GROUP = 15

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR ( ) = NO INFO \* = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SA.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 1J = AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NFG. AT PP IF ALT NOT 0.0

MIS SION	MAG HULL	FR. OR	PHOTO LAT.	PRIN. PT.	ORB #	GET TIMES-HH M SEC (ESTIMATED)	GMT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N.MI K=KM.	SCALE AT PRIN. PT.	TILT AZ	SUN ANG.	SIDE ANG.	FOOT. LAP R. R	
L 4	1	160	42.79S	54.52W	29	***	045917	5-23-67 LUNAR ORB HI. 610MM R&W	-	NONE	3012K	4937705	97	4.8	17	-.00
CAM.NAD.= 42.03S 65.80W SWING= 296. PHASE= 85. EMIS.ANG.= 13. CAM.RAD.= 4751.2 KM. SUN AZM= 72.3																
LAC 110 SCHICKARD; WESTERN PART OF LAC 125 SCHILLER; SOUTHERN PART OF LAC 92 BYRGJUS, DARWIN & LAC 124 PHOXYLIDES																
L 4	1	166	71.31S	60.23W	30	***	161844	5-23-67 LUNAR ORB HI. 610MM R&W	-	NONE	3593K	5890164	101	3.4	7	-.00
CAM.NAD.= 71.19S 82.44W SWING= 264. PHASE= 93. EMIS.ANG.= 10. CAM.RAD.= 5332.2 KM. SUN AZM= 66.4																
LAC 136 BAILLEY, K; LAC 124 PHOXYLIDE; LAC 110 SCHICKARD; LAC 137 NEWTON, MORETUS & LAC 144 SCOTT, S. POLE																
L 4	1	167	42.01S	60.70W	30	***	170012	5-23-67 LUNAR ORB HI. 610MM R&W	-	NONE	3009K	4932787	95	5.0	17	-.00
CAM.NAD.= 41.82S 72.48W SWING= 292. PHASE= 86. EMIS.ANG.= 14. CAM.RAD.= 4748.2 KM. SUN AZM= 72.6																
LAC 110 SCHICKARD; LAC 109 PIAZZI, V.; LAC 124 PHOXYLIDE; LAC 125 SCHILLER, SEGNER & LAC 91 EICHSTADT, SE.																
L 4	2	168	14.44S	68.18W	30	***	173229	5-23-67 LUNAR ORB LU.F=80MM R&W	-	NONE	2722K	34025000	103	.9	17	-.00
CAM.NAD.= 14.14S 69.56W SWING= 288. PHASE= 76. EMIS.ANG.= 2. CAM.RAD.= 4461.2 KM. SUN AZM= 84.9																
LAC 74 GHJMALDUB; >1/2 MOON SPHERE; LAC 124 PHOXYLIDE; LAC 22 SE. GERARD, RONSEN, HARDING & LAC 57 KEPLER, ECKE																
L 4	1	172	42.94S	67.94W	31	***	050029	5-24-67 LUNAR ORB HI. 610MM R&W	-	NONE	3011K	4934066	100	4.8	16	-.00
CAM.NAD.= 41.98S 79.20W SWING= 297. PHASE= 86. EMIS.ANG.= 13. CAM.RAD.= 4750.2 KM. SUN AZM= 73.1																
LAC 109 PIAZZI, V.; LAC 110 SCHICKARD; LAC 124 PHOXYLIDE; LAC 125 SCHILLER, SEGNER & LAC 91 EICHSTADT, SE.																
L 4	1	179	69.52S	74.07W	32	***	161924	5-24-67 LUNAR ORB HI. 610MM R&W	-	NONE	3592K	5888525	86	3.6	7	-.00
CAM.NAD.= 71.38S 96.22W SWING= 246. PHASE= 94. EMIS.ANG.= 11. CAM.RAD.= 5331.2 KM. SUN AZM= 68.2																
LAC 136 BAILLEY, KIRCHER; LAC 143 S. HAUSEN LEGENTIL; LAC 124 PHOXYLIDES & LAC 109 PIAZZI, V. HU																
L 4	1	180	40.83S	75.22W	32	***	170054	5-24-67 LUNAR ORB HI. 610MM R&W	-	NONE	3007K	4932787	85	4.6	16	-.00
CAM.NAD.= 42.00S 85.86W SWING= 283. PHASE= 87. EMIS.ANG.= 13. CAM.RAD.= 4748.2 KM. SUN AZM= 74.6																
CENTRAL PART OF LAC 109 PIAZZI, V.; CENTRAL PART OF LAC 124 PHOXYLIDE; LAC 91 EICHSTADT, SE. ORJEN & LAC 110 SCHICKARD, LA																
L 4	1	186	42.27S	61.34W	33	***	050123	5-25-67 LUNAR ORB HI. 610MM R&W	-	NONE	3006K	4927869	95	4.7	16	-.00
CAM.NAD.= 41.96S 92.48W SWING= 293. PHASE= 87. EMIS.ANG.= 13. CAM.RAD.= 4745.2 KM. SUN AZM= 74.2																
LAC 109 PIAZZI, V. BUUVARD; LAC 135 PINGRE N. HAUSEN; LAC 124 PHOXYLIDES & LAC 123 STEKLOV																
L 4	1	193	63.89S	85.97W	34	***	162428	5-25-67 LUNAR ORB HI. 610MM R&W	-	NONE	3519K	5768852	70	4.8	9	-.00
CAM.NAD.= 68.07S 107.44W SWING= 232. PHASE= 95. EMIS.ANG.= 15. CAM.RAD.= 5258.2 KM. SUN AZM= 68.4																
LAC 135 PINGRE N. HAUSEN; LAC 124 PHOXYLIDE; LAC 109 PIAZZI, V.; LAC 123 STEKLOV; LAC 143 S. HAUSEN & LAC 136 BAIL																

MIS MAG		FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT!	SCALE AT	T I L T	SUN SIDE
SION ROLL	OR	LAT.	#	TIMES-HR M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
#	#	MAIN	LONG.	(ESTIMATED)				TYPE		M=N.MI	PT.	FR.	LAP
		#								K=KM.		VERT	%
L 4	1	194	42.475	86.50W	34	000	0000	170147	5-25-67	LUNAR ORB HI.	610MM B&W	-	NONE 3003K 4922951 100 5.3 16 -.90
		CAN. RAD. = 42.015		99.09W	SWING = 297.		PHASE = BH.		EMIS. ANG. = 15.		CAN. RAD. = 4742.2 KM.		SUN AZM = 73.3
		LAC 123 STERLUV			1 LAC 109 PIAZZI, V. BOUVARD		1 LAC 135 PINGRE N. HAUSEN		6 LAC 124 PHOCYLIDES				

TOTAL PHOTOS IN THIS GROUP = 10



REPRODUCTION OF THE  
ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS,  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-), (+), ( ), (O) = NO INFO W = APPROXIMATELY NEXT TO MAGN. BRACKET MOUNTED; G = CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTAR = EKTAR 2.8 LENS;  
MSB = HASSELBLAD; MAUR = MAURER; ZP, ZB, ZS = ZEISS LENS(PLANAR, BIOGEN, SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
1/1000 AS EXPOS SPEED = 1/1000 FOR \* = TWO ZEROES  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR M SEC (ESTIMATED)	GMT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N.HI K=KM.	SCALE AT PRIN. PT.	TILT AZ ANG. VERT	SUN SIDE ANG. FPD. FR. LAP
L 4	1	130	65.025	25.85W	24 00 00.00	161143	5-20-67 LUNAR ORB HI. 610MM B&W	- NONE	3575K	5460656	46	4.1 9 -...
CAM.NAD.= 71.035 40.64W SWING= 211. PHASE= 91. EMIS.ANG.= 13. CAM.RAD.= 5314.2 KM. SUN AZM= 69.3												
LAC 137 NEWTON, MO; LAC 136 BAILLEY, K; LAC 126 CLAVIUS, M; LAC 125 SCHILLER, SEGNER & LAC 111 WILHELM, ELGE												
L 4	1	131	36.515	23.47W	24 00 00.00	165252	5-20-67 LUNAR ORB HI. 610MM B&W	- NONE	2999K	4916393	52	5.0 20 -...
CAM.NAD.= 42.205 32.12W SWING= 251. PHASE= 83. EMIS.ANG.= 14. CAM.RAD.= 4738.2 KM. SUN AZM= 74.0												
LAC 111 WILHELM, ELGE, MEE; LAC 112 TYCHO, STOFER; LAC 93 M.HUMOR., GASSENDI & LAC 94 PITATUS, M.NU												
L 4	2	132	9.145	29.59W	24 00 00.00	172507	5-20-67 LUNAR ORB LO.F=80MM B&W	- NONE	2717K	33942500	1	3.4 19 -...
CAM.NAD.= 14.425 29.69W SWING= 188. PHASE= 72. EMIS.ANG.= 9. CAM.RAD.= 4456.2 KM. SUN AZM= 86.2												
LAC 76 HIPHAELUS, M; >1/2 MOON SPHERE; LAC 125 SCHILLER,; LAC 39 ARISTARCHUS & LAC 25 CASSINI, ALPS												
L 4	1	136	42.655	27.40W	25 00 00.00	045435	5-21-67 LUNAR ORB HI. 610MM B&W	- NONE	3003K	4222951	97	4.8 19 -...
CAM.NAD.= 42.165 38.84W SWING= 295. PHASE= 83. EMIS.ANG.= 13. CAM.RAD.= 4742.2 KM. SUN AZM= 70.3												
LAC 111 WILHELM, E; LAC 125 SCHILLER,; LAC 126 CLAVIUS, M; LAC 93 M.HUMOR., GASSENDI & LAC 94 PITATUS, M.NU												
L 4	1	142	42.045	33.37W	26 00 00.00	165605	5-21-67 LUNAR ORB HI. 610MM B&W	- NONE	3007K	4929508	93	5.2 20 -...
CAM.NAD.= 42.145 45.58W SWING= 291. PHASE= 84. EMIS.ANG.= 14. CAM.RAD.= 4746.2 KM. SUN AZM= 70.4												
WESTERN PART OF LAC 111 WILHELM, EL; LAC 125 SCHILLER, S; LAC 126 CLAVIUS, M; LAC 93 M.HUMOR., GASSENDI & LAC 110 SCHICKAR												
L 4	1	148	42.455	41.38W	27 00 00.00	045722	5-22-67 LUNAR ORB HI. 610MM B&W	- NONE	3009K	4932787	99	4.6 18 -...
CAM.NAD.= 42.115 52.33W SWING= 297. PHASE= 84. EMIS.ANG.= 13. CAM.RAD.= 4748.2 KM. SUN AZM= 71.6												
LAC 110 SCHICKARD; LAC 111 WILHELM, E; LAC 125 SCHILLER,; LAC 92 BYRGIUS, DARWIN & LAC 93 M.HUMOR., GASS												
L 4	1	154	71.705	33.51W	28 00 00.00	161555	5-22-67 LUNAR ORB HI. 610MM B&W	- NONE	3413K	5922951	105	5.2 11 -...
CAM.NAD.= 72.185 69.24W SWING= 268. PHASE= 94. EMIS.ANG.= 16. CAM.RAD.= 5352.2 KM. SUN AZM= 52.7												
LAC 137 NEWTON, MO; LAC 136 BAILLEY, K; LAC 125 SCHILLER,; LAC 138 HANZINUS, SCHMIGER & LAC 139 HELMHOLZ, HAL												
L 4	1	155	42.415	48.89W	28 00 00.00	165826	5-22-67 LUNAR ORB HI. 610MM B&W	- NONE	3011K	4936066	95	4.3 17 -...
CAM.NAD.= 42.075 59.07W SWING= 293. PHASE= 84. EMIS.ANG.= 12. CAM.RAD.= 4750.2 KM. SUN AZM= 72.8												
CENTRAL PART OF LAC 110 SCHICKARD; LAC 111 WILHELM, EL; LAC 125 SCHILLER,; LAC 92 BYRGIUS, DARWIN & LAC 93 M.HUMOR.,												
L 4	1	160	42.795	54.52W	29 00 00.00	045917	5-23-67 LUNAR ORB HI. 610MM B&W	- NONE	3012K	4937705	99	4.8 17 -...
CAM.NAD.= 42.035 65.80W SWING= 296. PHASE= 85. EMIS.ANG.= 13. CAM.RAD.= 4751.2 KM. SUN AZM= 72.3												
LAC 110 SCHICKARD; WESTERN PART OF LAC 125 SCHILLER,; SOUTHERN PART OF LAC 92 BYRGIUS, DARWIN & LAC 124 PHOCYLIDES												

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LAC 125 SCHILLER, SEGNER

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MIS MAG		FR, PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE,				
SION KULL	OR	LAT.	#	TIMES-HH M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.	
#	#	MAIN	LUNG.	(i=ESTIMATED)				TYPE		M=N.MI	PT.	FR.	LAP			
										K=KM.		VERT	B. 8			
L 4	1	167	42.315	60.70W	30	***	****	170012	5-23-67 LUNAR ORB HI, 610MM B&W	-	NONE	3009K	4932787	95	5.0	17
		CAM-NAD.= 41.825		72.486	SWING= 292.		PHASE= 86.		EHIS-ANG.= 14.		CAM-RAD.=		4748.2	KM.	SUN AZH= 72.6	
		LAC 110 SCHICKARD :		LAC 109 PIAZZI, V. :		LAC 124 PHOXYLIDE :		LAC 125 SCHILLER, SEGNER				6	LAC 91 EICHSTADT, SE.			
L 4	1	172	42.945	67.94W	31	***	****	050029	5-24-67 LUNAR ORB HI, 610MM B&W	-	NONE	3011K	4936066	100	4.8	16
		CAM-NAD.= 41.985		79.20W	SWING= 297.		PHASE= 86.		EHIS-ANG.= 13.		CAM-RAD.=		4750.2	KM.	SUN AZH= 73.1	
		LAC 109 PIAZZI, V. :		LAC 110 SCHICKARD :		LAC 124 PHOXYLIDE :		LAC 125 SCHILLER, SEGNER				6	LAC 91 EICHSTADT, SE.			

TOTAL PHOTOS IN THIS GROUP = 11

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN:     \* = DEGRADED PHOTOS,     \* = ALMOST UNUSABLE PHOTOS,  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-), (+), ( ) , OR (U) = NO INFO     W = APPROXIMATELY     NEXT TO MAGN. H=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS:     SW.A. = SUPER WIDE ANGLE LENS; EXTW=EXTAR 2.8 LENS;  
H.S.B.= HASSLEBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIUGEN,SONAR);     FOCAL LENGTH(MM) & MAX.F-OPENING  
1/6 = AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO;     SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT D.O

NIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	H-DA-YR	CAMERA-LENS OR SENSOR	FILM-EXPOSURE AND FILTER	ALTI	SCALE	T I L T	SUN SINF.	
SION	ROLL	OR	LAT.	#		#	TIMES-HR N SEC	(ESTIMATED)		TYPE		ITUDE	PRIN.	AZ	ANG.	FWD.
#	#	MAIN										M=N.MI K=KM.	PT.		FR.	LAP
															VERT	% R
L 4	1	94	72.11S	20.17E	18	***	****	1600008	5-17-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3517K	5765574	103 3.2 9 -..**
			CAM.NAD.= 71.7US	U.67W			SWING= 270.		PHASE= 90.	EMIS.ANG.= 10.	CAM.RAD.=	5256.2 KM.		SUN AZM= 59.4		
			LAC 136 MANZINUS;				LAC 137 NEWTON,H0 ;		LAC 127 HOMMEL,VL ;		LAC 126 CLAVIUS,MAGINUS			6	LAC 144 SCOTT,S.POLE	
L 4	2	94	72.11S	20.19E	18	***	****	1600008	5-17-67	LUNAR	ORB LO,F=80MM B&W	-	NONE	3517K	43962500	103 3.2 9 -..**
			CAM.NAD.= 71.7US	U.67W			SWING= 270.		PHASE= 90.	EMIS.ANG.= 10.	CAM.RAD.=	5256.2 KM.		SUN AZM= 59.4		
			LAC 136 MANZINUS;				>1/2 MOON SPHERE ;		LAC 126 CLAVIUS,M ;		LAC 144 SCOTT,S.POLE NEARSIDE >	805	6	LAC 145 S.POLE FARSI		
L 4	2	96	15.17S	10.66E	18	***	****	171241	5-17-67	LUNAR	ORB LO,F=80MM B&W	-	NONE	2722K	34025000	138 .6 22 -.87
			CAM.NAD.= 14.45S	9.99E			SWING= 324.		PHASE= 69.	EMIS.ANG.= 2.	CAM.RAD.=	4461.2 KM.		SUN AZM= 83.2		
			LAC 78 THEOPHILUS ;				>1/2 MOON SPHERE ;		LAC 41 APENNINES, ;		LAC 26 EUDOXUS,BURG			6	LAC 126 CLAVIUS,MAGI	
L 4	2	101	15.19S	3.83E	19	***	****	051444	5-18-67	LUNAR	ORB LO,F=80MM B&W	-	NONE	2720K	34000000	150 .5 21 -..**
			CAM.NAD.= 14.45S	3.38E			SWING= 336.		PHASE= 69.	EMIS.ANG.= 1.	CAM.RAD.=	4459.2 KM.		SUN AZM= 83.4		
			LAC 77 PTOLMAEUS ;				>1/2 MOON SPHERE ;		LAC 41 APENNINES, ;		LAC 43 MACRUBIUS,PROCLUS			6	LAC 126 CLAVIUS,MAGI	
L 4	1	106	72.16S	9.46E	20	***	****	160406	5-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3535K	5795082	104 3.4 9 -..**
			CAM.NAD.= 71.71S	13.37W			SWING= 272.		PHASE= 90.	EMIS.ANG.= 10.	CAM.RAD.=	5274.2 KM.		SUN AZM= 58.0		
			LAC 137 NEWTON,H0 ;				LAC 136 MANZINUS, ;		LAC 126 CLAVIUS,M ;		LAC 127 HOMMEL,VLAC			6	LAC 144 SCOTT,S.POLE	
L 4	2	108	14.26S	2.36W	20	***	****	171651	5-18-67	LUNAR	ORB LO,F=80MM B&W	-	NONE	2719K	33987500	76 .5 21 -.12
			CAM.NAD.= 14.45S	3.17W			SWING= 262.		PHASE= 70.	EMIS.ANG.= 1.	CAM.RAD.=	4458.2 KM.		SUN AZM= 83.8		
			LAC 77 PTOLMAEUS, ;				>1/2 MOON SPHERE ;		LAC 126 CLAVIUS,M ;		LAC 25 CASSINI,ALPS MTS			6	LAC 61 TARANTIVS,LYE	
L 4	1	112	42.58S	1.35N	21	***	****	044650	5-19-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2986K	4895082	95 4.6 20 -..**
			CAM.NAD.= 42.26S	12.09W			SWING= 294.		PHASE= 81.	EMIS.ANG.= 13.	CAM.RAD.=	4725.2 KM.		SUN AZM= 69.2		
			LAC 112 TYCHO,STOFLER				; LAC 113 MAUROLYCUS,NAB.LEVI		; LAC 126 CLAVIUS,MAGINUS					6	LAC 127 HOMMEL,VLAC	
L 4	1	118	72.49S	6.99W	22	***	****	160805	5-19-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3555K	5827867	107 3.0 8 -..**
			CAM.NAD.= 71.67S	26.89W			SWING= 275.		PHASE= 90.	EMIS.ANG.= 9.	CAM.RAD.=	5294.2 KM.		SUN AZM= 62.0		
			LAC 137 NEWTON,H0 ;				LAC 136 MANZINUS, ;		LAC 126 CLAVIUS,M ;		LAC 144 SCOTT,S.POLE NEARSIDE >	805	6	LAC 145 S.POLE FARSI		
L 4	1	119	42.79S	7.44W	22	***	****	164855	5-19-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2991K	4903279	97 4.8 20 -..**

MIS	NO	FR. PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE							
SUN KULL	OR	LAT.	#	TIMES-HR	M SEC			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.				
#	#	MAIN	LONG.	(ESTIMATED)				TYPE		M=H, HI	PT.	FR.	LAP						
		#								K=KM.		VERT	B. R						
L 4	2	120	14.28S	15.64W	22	000	0000	172107	5-19-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2717K	33942500	77	4.5	20	-12
CAM-NAO.= 14.46S 16.43W SWING= 263. PHASE= 71. EMIS-ANG.= 1. CAM-RAD.= 4456.2 KM. SUN AZM= 89.0																			
LAC 76 RHPHAELUS M ; >1/2 MOON SPHERE ; LAC 126 CLAVIUS, M ; LAC 25 CASSINI, ALPS MTS & LAC 42 M. SERENITY, DA																			
L 4	1	124	43.03S	14.08W	23	000	0000	045059	5-20-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2994K	4908197	99	4.8	20	-00
CAM-NAO.= 42.21S 25.42W SWING= 297. PHASE= 82. EMIS-ANG.= 13. CAM-RAD.= 4733.2 KM. SUN AZM= 69.4																			
EASTERN PART OF LAC 111 WILHELM, E ; LAC 112 TYCHO, STO ; SOUTHERN PART OF LAC 94 PITATUS, M. NUBIUM & LAC 126 CLAVIUS, MAGINUS																			
L 4	1	130	65.12S	25.85W	24	000	0000	161143	5-20-67	LUNAR	ORB HI. 610MM B&W	-	NONE	575K	5860656	46	4.1	9	-00
CAM-NAO.= 71.03S 40.64W SWING= 211. PHASE= 91. EMIS-ANG.= 13. CAM-RAD.= 5314.2 KM. SUN AZM= 69.3																			
LAC 131 NEWTON, NU ; LAC 136 BAILLEY, K ; LAC 126 CLAVIUS, M ; LAC 125 SCHILLER, SEGNER & LAC 111 WILHELM, ELGE																			
L 4	1	131	56.51S	23.47W	24	000	0000	165252	5-20-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2999K	4916373	52	5.0	20	-00
CAM-NAO.= 42.20S 32.12W SWING= 251. PHASE= 83. EMIS-ANG.= 14. CAM-RAD.= 4738.7 KM. SUN AZM= 74.0																			
LAC 111 WILHELM, ELGER, MEE ; LAC 112 TYCHO, STOFER ; LAC 93 M. HUMOR, GASSENDI & LAC 94 PITATUS, M. NU																			
L 4	1	136	42.65S	27.40W	25	000	0000	045435	5-21-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3003K	4922951	97	4.8	19	-00
CAM-NAO.= 42.16S 38.84W SWING= 295. PHASE= 83. EMIS-ANG.= 13. CAM-RAD.= 4742.2 KM. SUN AZM= 70.3																			
LAC 111 WILHELM, E ; LAC 125 SCHILLER, ; LAC 126 CLAVIUS, M ; LAC 93 M. HUMOR, GASSENDI & LAC 94 PITATUS, M. NUB																			
L 4	1	142	42.54S	33.37W	26	000	0000	165605	5-21-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3007K	4929508	93	5.2	20	-00
CAM-NAO.= 42.14S 45.58W SWING= 291. PHASE= 84. EMIS-ANG.= 14. CAM-RAD.= 4746.2 KM. SUN AZM= 70.4																			
WESTERN PART OF LAC 111 WILHELM, EL ; LAC 125 SCHILLER, S ; LAC 126 CLAVIUS, M ; LAC 93 M. HUMOR, GASSENDI & LAC 110 SCHICKAR																			
L 4	1	148	42.95S	41.38W	27	000	0000	045722	5-22-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3009K	4932707	99	4.6	18	-00
CAM-NAO.= 42.11S 52.33W SWING= 297. PHASE= 84. EMIS-ANG.= 13. CAM-RAD.= 4748.2 KM. SUN AZM= 71.4																			
LAC 110 SCHICKAR ; LAC 111 WILHELM, E ; LAC 125 SCHILLER, ; LAC 92 HYRGIUS, DARWIN & LAC 93 M. HUMOR, GASSENDI																			
L 4	2	156	14.87S	55.80W	28	000	0000	173043	5-22-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2722K	34025000	135	4.4	17	-00
CAM-NAO.= 14.39S 55.29W SWING= 321. PHASE= 74. EMIS-ANG.= 1. CAM-RAD.= 4461.2 KM. SUN AZM= 84.7																			
LAC 74 GRIMALDI, B ; >1/2 MOON SPHERE ; LAC 136 BAILLEY, K ; LAC 22 SE. GERHARD, RUNSEN, HARDING & LAC 40 TIMOCHARIS, LA																			
L 4	2	167	42.01S	60.70W	30	000	0000	170012	5-23-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3009K	37417500	95	5.0	17	-00
CAM-NAO.= 41.82S 72.48W SWING= 292. PHASE= 86. EMIS-ANG.= 14. CAM-RAD.= 4748.2 KM. SUN AZM= 72.6																			
LAC 110 SCHICKAR, LACROIX ; >1/2 MOON SPHERE ; LAC 144 SCOTT, S. POLE NEAR SIDE > > LAC 55 VASCO DE GAMMA																			
L 4	2	172	42.93S	67.94W	31	000	0000	050029	5-24-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3011K	37437500	100	4.8	16	-00
CAM-NAO.= 41.98S 79.20W SWING= 297. PHASE= 86. EMIS-ANG.= 13. CAM-RAD.= 4750.2 KM. SUN AZM= 73.1																			
LAC 107 PIAZZI, V. BOUVARD ; >1/2 MOON SPHERE ; LAC 144 SCOTT, S. POLE NEAR SIDE > > LAC 72 ELVEY NOREL																			
L 4	2	186	42.26S	61.34W	33	000	0000	050123	5-25-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3006K	37575000	95	4.7	16	-00
CAM-NAO.= 41.96S 92.48W SWING= 293. PHASE= 87. EMIS-ANG.= 13. CAM-RAD.= 4745.2 KM. SUN AZM= 74.2																			
LAC 109 PIAZZI, V. BOUVARD ; >1/2 MOON SPHERE ; LAC 144 SCOTT, S. POLE NEAR SIDE > > LAC 72 ELVEY NOREL																			

REVIEW COPY OF THE  
ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-),(+), ( ), (0) = NO INFO \* = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
H5B=HASSELBLAD; MAUR=MAURER; ZP,ZH,ZS = ZEISS LENS(PLANAR,BIDGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0,0

MIS STUN	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LONG.	PI. N	ORB H	GET TIMES	GMT HR	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TIDE	SCALE PRIN.	T I L T AZ	SUN ANG.	STOE. ANG.	FWD. FR.	LAP VERT	R R
L 4	1	70	72-055	49-06E	14	**	****	155335	5-15-67	LUNAR ORB HI. 610MM B&W	- NONE	3497K	57327A7	109	3.7	10	-..		
CAN.HAD.= 71.565 24.60E SWING= 276. PHASE= 90. EMIS.ANG.= 11. CAM.RAD.= 5236.2 KM. SUN AZH= 55.1																			
LAC 138 MANZINUS, ; LAC 139 HELMHOLTZ, ; LAC 127 HOMMEL,VL ; LAC 128 BIELA,WATT & LAC 144 SCOTT,S.POLE																			
L 4	1	76	42-775	37-87E	15	**	****	043514	5-16-67	LUNAR ORB HI. 610MM B&W	- NONE	2972K	4872131	97	4.5	22	-..		
CAN.HAD.= 42.215 27.23E SWING= 296. PHASE= 79. EMIS.ANG.= 12. CAM.RAD.= 4711.2 KM. SUN AZH= 67.2																			
LAC 114 RHEITA,JANSSEN ; LAC 113 MAURULYCUS,RAB.LEVI ; LAC 127 HOMMEL,VLACW & LAC 128 BIELA,WATT																			
L 4	1	82	72-375	32-47E	16	**	****	155638	5-16-67	LUNAR ORB HI. 610MM B&W	- NONE	3503K	5742623	106	3.1	9	-..		
CAN.HAD.= 71.625 12.04E SWING= 273. PHASE= 90. EMIS.ANG.= 9. CAM.RAD.= 5242.2 KM. SUN AZH= 59.4																			
LAC 138 MANZINUS,SCHMUGER ; LAC 127 HOMMEL,VLACW ; LAC 144 SCOTT,S.POLE NEARSIDE >6 LAC 145 S.POLE FAR5																			
L 4	1	83	42-955	32-82E	16	**	****	163652	5-16-67	LUNAR ORB HI. 610MM B&W	- NONE	2972K	4872131	98	5.1	23	-..		
CAN.HAD.= 42.235 20.71E SWING= 297. PHASE= 80. EMIS.ANG.= 14. CAM.RAD.= 4711.2 KM. SUN AZH= 66.3																			
LAC 113 MAURULYCUS,RAB.LEVI ; LAC 114 RHEITA,JA ; LAC 127 HOMMEL,VL ; LAC 128 BIELA,WA ; LAC 96 ALTAI & LAC 97 FRACA																			
L 4	1	88	42-705	24-94E	17	**	****	043838	5-17-67	LUNAR ORB HI. 610MM B&W	- NONE	2973K	4873770	96	4.6	22	-..		
CAN.HAD.= 42.265 14.18E SWING= 295. PHASE= 80. EMIS.ANG.= 13. CAM.RAD.= 4712.2 KM. SUN AZH= 67.8																			
LAC 113 MAURULYCUS,RAB.LEVI ; LAC 114 RHEITA,JA & EASTERN PART OF LAC 127 HOMMEL,VLACW																			
L 4	1	94	72-115	20-19E	18	**	****	160008	5-17-67	LUNAR ORB HI. 610MM B&W	- NONE	3517K	5765574	103	3.2	9	-..		
CAN.HAD.= 71.705 0-67W SWING= 270. PHASE= 90. EMIS.ANG.= 10. CAM.RAD.= 5256.2 KM. SUN AZH= 59.4																			
LAC 138 MANZINUS, ; LAC 137 NEWTON,MO ; LAC 127 HOMMEL,VL ; LAC 126 CLAVIUS,HAGINUS & LAC 144 SCOTT,S.POLE																			
L 4	1	95	42-545	18-70E	18	**	****	164033	5-17-67	LUNAR ORB HI. 610MM B&W	- NONE	2976K	4878689	95	4.7	22	-..		
CAN.HAD.= 42.275 7.64E SWING= 294. PHASE= 80. EMIS.ANG.= 13. CAM.RAD.= 4715.2 KM. SUN AZH= 67.9																			
WESTERN PART OF LAC 113 MAURULYCUS,RAB.LEVI ; LAC 127 HOMMEL,VL & LAC 128 BIELA,WATT																			
L 4	1	100	42-725	12-29E	19	**	****	044237	5-18-67	LUNAR ORB HI. 610MM B&W	- NONE	2978K	4881967	96	4.8	21	-..		
CAN.HAD.= 42.265 1-05E SWING= 295. PHASE= 81. EMIS.ANG.= 13. CAM.RAD.= 4717.2 KM. SUN AZH= 68.0																			
WESTERN PART OF LAC 113 MAURULYCUS,RAB.LEVI ; LAC 112 TYCHO,STO & LAC 127 HOMMEL,VLACW																			
L 4	1	106	72-165	9-46E	20	**	****	160406	5-18-67	LUNAR ORB HI. 610MM B&W	- NONE	3535K	5795082	104	3.4	9	-..		
CAN.HAD.= 71.715 13.37W SWING= 272. PHASE= 90. EMIS.ANG.= 10. CAM.RAD.= 5274.2 KM. SUN AZH= 58.0																			
LAC 137 NEWTON,MO ; LAC 138 MANZINUS, ; LAC 126 CLAVIUS,M ; LAC 127 HOMMEL,VLACW & LAC 144 SCOTT,S.POLE																			

MIS SION	MAG #	FR #	PHOTO MAIN	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES-HR M SEC [! = ESTIMATED]	GMT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALLI TUDE	SCALE AT PRIN. M=N.MI K=KM.	AT PT.	T I L T AZ	SUN SIDE, ANG. ANG. FWD. FR. LAP VERT B. %
L 4	1	112	42.585	1.35W	21	***	***	044650	5-19-67	LUNAR ORB HI. 610MM B&W	- NONE	2986K	4895.0	82	95	4.6 20 -...
CAM.RAD.= 42.265 12.09W SWING= 294. PHASE= 81. EMIS.ANG.= 13. CAM.RAD.= 4725.2 KM. SUN AZH= 69.2																
LAC 112 TYCHO,STOFLER ; LAC 113 MAUROLYCUS,RAB.LEVI ; LAC 126 CLAVIUS,MAGINUS ; LAC 127 HOMMEL,V.LAC																
L 4	1	119	42.795	1.44W	22	***	***	164855	5-19-67	LUNAR ORB HI. 610MM B&W	- NONE	2991K	4903.2	79	97	4.8 20 -...
CAM.RAD.= 42.265 18.74W SWING= 295. PHASE= 82. EMIS.ANG.= 13. CAM.RAD.= 4730.2 KM. SUN AZH= 69.1																
LAC 112 TYCHO,STO ; LAC 126 CLAVIUS,M ; LAC 127 HOMMEL,V.L ; LAC 94 PITATUS,M.NUBIUM ; LAC 95 PURBACH,AR7AC																
L 4	2	125	14.895	22.97W	23	***	***	052314	5-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	2717K	3396.2	50	170	.3 19 -.90
CAM.RAD.= 14.465 23.06W SWING= 356. PHASE= 71. EMIS.ANG.= 1. CAM.RAD.= 4456.2 KM. SUN AZH= 84.2																
LAC 76 HIPHAEUS M ; >1/2 MOON SPHERE ; LAC 128 BIELA,WAT ; LAC 23 RUMKER,SHARP ; LAC 26 EUDOXUS,BURG																
L 4	2	132	9.145	29.59W	24	***	***	172507	5-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	2717K	3396.2	50	1	3.4 19 -...
CAM.RAD.= 14.425 29.69W SWING= 188. PHASE= 72. EMIS.ANG.= 9. CAM.RAD.= 4456.2 KM. SUN AZH= 86.2																
LAC 76 HIPHAEUS M ; >1/2 MOON SPHERE ; LAC 125 SCHILLER, ; LAC 39 ARISTARCHUS ; LAC 25 CASSINI,ALPS																
L 4	2	137	14.975	35.29W	25	***	***	052651	5-21-67	LUNAR ORB LO.F=80MM B&W	- NONE	2718K	3397.5	00	119	.7 19 -...
CAM.RAD.= 14.465 26.34W SWING= 305. PHASE= 73. EMIS.ANG.= 2. CAM.RAD.= 4457.2 KM. SUN AZH= 84.1																
LAC 75 LEIRHNE,F ; >1/2 MOON SPHERE ; LAC 136 BAILLEY,K ; LAC 139 HELMHOLZ,HALE ; LAC 141 RAYLEIGH																
L 4	2	142	42.045	33.37W	26	***	***	165605	5-21-67	LUNAR ORB LO.F=80MM B&W	- NONE	3007K	3758.7	50	93	5.2 20 -...
CAM.RAD.= 42.145 45.58W SWING= 291. PHASE= 84. EMIS.ANG.= 14. CAM.RAD.= 4746.2 KM. SUN AZH= 70.4																
LAC 111 WILHELM,ELGER,MEE ; >1/2 MOON SPHERE ; LAC 144 SCOTT,S.POLF NEARSIDE >6 ; LAC 56 HEVELIUS,REI																
L 4	2	148	42.945	41.38W	27	***	***	045722	5-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	3009K	3761.2	50	99	4.6 18 -...
CAM.RAD.= 42.115 52.33W SWING= 297. PHASE= 84. EMIS.ANG.= 13. CAM.RAD.= 4748.2 KM. SUN AZH= 71.6																
LAC 110 SCHICKARD,LACROIX ; >1/2 MOON SPHERE ; LAC 144 SCOTT,S.POLF NEARSIDE >6 ; LAC 56 HEVELIUS,REI																
L 4	2	155	42.405	48.89W	28	***	***	165827	5-22-67	LUNAR ORB LO.F=80MM B&W	- NONE	3011K	3763.7	50	95	4.3 17 -...
CAM.RAD.= 42.175 59.07W SWING= 293. PHASE= 84. EMIS.ANG.= 12. CAM.RAD.= 4750.2 KM. SUN AZH= 72.8																
LAC 110 SCHICKARD,LACROIX ; >1/2 MOON SPHERE ; LAC 144 SCOTT,S.POLF NEARSIDE >6 ; LAC 56 HEVELIUS,REI																
L 4	2	193	63.885	85.98W	34	***	***	162428	5-25-67	LUNAR ORB LO.F=80MM B&W	- NONE	3519K	4398.7	50	70	9.8 9 -...
CAM.RAD.= 60.075 107.44W SWING= 232. PHASE= 95. EMIS.ANG.= 15. CAM.RAD.= 5258.2 KM. SUN AZH= 68.6																
LAC 135 PINGRE W.HAUSEN ; >1/2 MOON SPHERE ; LAC 139 HELMHOLZ, ; LAC 90 LOREIL ; LAC 74 GRIMA ; LAC 127 HOMMEL																

TOTAL PHOTOS IN THIS GROUP = 18

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. % = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTH=EKTAR 2.8 (FNS)  
H5B= HASSELBLAD; MAUR= MAUKER; ZP,ZB,ZS = ZEISS LENS (PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
10 = AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	HAG ROLL	FR. LAT.	PHOTO LAT.	PRIN. LONG.	PT. #	ORB #	GET TIMES-HH M SEC (ESTIMATED)	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE M=N,M1 K=KM.	SCALE AT PRIN. PT.	T L AZ	L T ANG.	SUN SID. ANG. FWD. LAP R, R		
L 4	1	325	71.405	77.79E	8	***	154747	5-12-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3505K	5745902	98	2.3	8	-...
CAM.HAD.= 71.245 63.03E SWING= 266. PHASE= 88. EMIS.ANG.= 7. CAM.RAD.= 5244.2 KM. SUN AZM= 63.1																		
DEGRADED NEGATIVE ; LAC 139 HELMHOLTZ ; LAC 129 M.AUSTRAL ; LAC 128 BIELA,WATT & LAC 144 SCOTT,S.POLE																		
L 4	1	44	72.125	69.06E	10	***	154924	5-13-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3498K	5734126	107	3.0	9	-...
CAM.HAD.= 71.275 50.06E SWING= 275. PHASE= 89. EMIS.ANG.= 9. CAM.RAD.= 5237.2 KM. SUN AZM= 59.6																		
LAC 139 HELMHOLTZ ; LAC 129 M.AUSTRAL ; LAC 128 BIELA,WAT ; LAC 144 SCOTT,S.POLE NEARSIDE > RDS & LAC 145 S.POLE FARSI																		
L 4	1	52	42.915	63.81E	11	***	043024	5-14-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2976K	4878.89	99	4.5	23	-...
CAM.HAD.= 42.065 53.33E SWING= 297. PHASE= 78. EMIS.ANG.= 12. CAM.RAD.= 4715.2 KM. SUN AZM= 66.0																		
LAC 115 FURNERIUS,UKEN ; LAC 128 BIELA,WATT ; LAC 129 M.AUSTRAL ; LAC 114 RHEITA,JA & SOUTHERN PART OF LAC 98 PETAVIUS,H																		
L 4	2	535	14.815	56.82E	11	***	050229	5-14-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2740K	34250000	122	.5	25	-..5A
CAM.HAD.= 14.415 56.14E SWING= 308. PHASE= 66. EMIS.ANG.= 1. CAM.RAD.= 4479.2 KM. SUN AZM= 82.4																		
DEGRADED NEGATIVE ; LAC 80 LANGRENUS ; LAC 44 CLEUMEDUS ; LAC 128 BIELA,WATT & LAC 64 NF.SMYTHII HF																		
L 4	1	58	71.585	54.40E	12	***	155118	5-14-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3494K	5727869	100	2.7	9	-...
CAM.HAD.= 71.365 37.31E SWING= 269. PHASE= 89. EMIS.ANG.= 8. CAM.RAD.= 5233.2 KM. SUN AZM= 62.0																		
LAC 138 MANZINUS ; LAC 139 HELMHOLTZ ; LAC 128 BIELA,WAT ; LAC 129 M.AUSTRAL,LYOT & LAC 144 SCOTT,S.POLE																		
L 4	1	59	41.755	55.05E	12	***	163122	5-14-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2975K	4877049	87	3.6	22	-...
CAM.HAD.= 42.115 44.79E SWING= 287. PHASE= 78. EMIS.ANG.= 10. CAM.RAD.= 4714.2 KM. SUN AZM= 68.5																		
LAC 114 RHEITA,JA ; LAC 115 FURNERIUS ; LAC 128 BIELA,WAT ; LAC 129 M.AUSTRAL,LYOT & LAC 98 PETAVIUS,HOLD																		
L 4	1	64	44.565	50.55E	13	***	043230	5-15-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2973K	4873770	96	4.4	23	-...
CAM.HAD.= 42.145 40.27E SWING= 294. PHASE= 79. EMIS.ANG.= 12. CAM.HAD.= 4712.2 KM. SUN AZM= 67.0																		
LAC 114 RHEITA,JA ; LAC 115 FURNERIUS ; LAC 128 BIELA,WAT ; LAC 129 M.AUSTRAL,LYOT & LAC 97 FRACASTORIUS,																		
L 4	1	70	72.655	49.06E	14	***	155335	5-15-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3497K	5732787	109	3.7	10	-...
CAM.HAD.= 71.565 24.60E SWING= 276. PHASE= 90. EMIS.ANG.= 11. CAM.RAD.= 5236.2 KM. SUN AZM= 55.1																		
LAC 138 MANZINUS ; LAC 139 HELMHOLTZ ; LAC 127 HUMMEL,VL ; LAC 128 BIELA,WATT & LAC 144 SCOTT,S.POLE																		
L 4	1	71	43.695	46.67E	14	***	163344	5-15-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2972K	4872131	103	5.5	24	-...
CAM.HAD.= 42.225 33.74E SWING= 301. PHASE= 80. EMIS.ANG.= 15. CAM.RAD.= 4711.2 KM. SUN AZM= 64.7																		
LAC 114 RHEITA,JA ; LAC 115 FURNERIUS ; LAC 128 BIELA,WAT ; LAC 129 M.AUSTRAL,LYOT & LAC 97 FRACASTORIUS,																		

HIS	MAG	PHOTO	PRIN. PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L I	SUN SIDE,
STUN ROLL	OR	LAT.	"	"	TIMES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FAD.
"	"	MAIN	LONG.	"	(=ESTIMATED)			TYPE		M=N.MI	PT.	FR.	LAP
										K=KM.		VERT	A. B
L 4 2	72	15.76S	37.86E	14	000	170548	5-15-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2732K 34150000	131	1.2 24 -0.70
CAM-NAO.= 14.50S 36.35E SWING= 316. PHASE= 68. EMIS-ANG.= 3. CAM-RAD.= 4471.2 KM. SUN AZM= 82.2													
LAC 79 COLUMBO, NE ; >1/2 MOON SPHERE ; LAC 43 MACROBIUS, ; LAC 80 LANGRENUS, M. FERT. 6 LAC 114 RHEITA, JANSS													
L 4 1	76	42.77S	37.87E	15	000	043514	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2972K 4872131	97	4.5 22 -0.00
CAM-NAO.= 42.21S 27.23E SWING= 296. PHASE= 79. EMIS-ANG.= 12. CAM-RAD.= 4711.2 KM. SUN AZM= 67.2													
LAC 114 RHEITA, JANSEN ; LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 127 HOMMEL, VLACQ 6 LAC 128 BIELA, WATT													
L 4 1	42	72.37S	32.47E	16	000	155638	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	3503K 5742623	106	3.1 9 -0.00
CAM-NAO.= 71.62S 12.04E SWING= 273. PHASE= 90. EMIS-ANG.= 9. CAM-RAD.= 5242.2 KM. SUN AZM= 59.4													
LAC 138 HANZLUS, SCHMIDGER ; LAC 127 HOMMEL, VLACQ ; LAC 144 SCOTT, S. POLE NEARSIDE >6 LAC 145 S. POLE FAR5													
L 4 1	83	42.95S	32.82E	16	000	163652	5-16-67	LUNAR ORB HI. 610MM B&W	-	NONE	2972K 4872131	98	5.1 23 -0.00
CAM-NAO.= 42.23S 20.71E SWING= 297. PHASE= 80. EMIS-ANG.= 14. CAM-RAD.= 4711.2 KM. SUN AZM= 66.3													
LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 114 RHEITA, JA ; LAC 127 HOMMEL, VL ; LAC 128 BIELA, WA ; LAC 9A ALTAT 6 LAC 97 FRACA													
L 4 1	88	42.70S	24.94E	17	000	043838	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2973K 4873770	96	4.6 22 -0.00
CAM-NAO.= 42.26S 14.18E SWING= 295. PHASE= 80. EMIS-ANG.= 13. CAM-RAD.= 4712.2 KM. SUN AZM= 67.8													
LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 114 RHEITA, JA 6 EASTERN PART OF LAC 127 HOMMEL, VLACQ													
L 4 1	95	42.54S	18.70E	18	000	164033	5-17-67	LUNAR ORB HI. 610MM B&W	-	NONE	2976K 4878689	95	4.7 22 -0.00
CAM-NAO.= 42.27S 7.64E SWING= 294. PHASE= 80. EMIS-ANG.= 13. CAM-RAD.= 4715.2 KM. SUN AZM= 67.9													
WESTERN PART OF LAC 113 MAUROLYCUS, RAB. LEVI ; LAC 127 HOMMEL, VL 6 LAC 128 BIELA, WATT													
L 4 2	119	42.78S	7.44W	22	000	164855	5-19-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2991K 37387500	97	4.8 20 -0.00
CAM-NAO.= 42.26S 18.74W SWING= 295. PHASE= 82. EMIS-ANG.= 13. CAM-RAD.= 4730.2 KM. SUN AZM= 69.1													
LAC 112 TYCHO, STOFER ; >1/2 MOON SPHERE ; LAC 144 SCOTT, S. POLE NEARSIDE >6 LAC 58 COPERNICUS, H													
L 4 2	125	14.89S	22.97W	23	000	052314	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2717K 33962500	170	0.3 19 -0.90
CAM-NAO.= 14.40S 23.06W SWING= 356. PHASE= 71. EMIS-ANG.= 1. CAM-RAD.= 4456.2 KM. SUN AZM= 84.2													
LAC 76 KIPHAEUS, H ; >1/2 MOON SPHERE ; LAC 128 BIELA, WATT ; LAC 23 RUMKER, SHARP 6 LAC 26 EUCLIDUS, BURG													
L 4 2	131	36.50S	23.47W	24	000	165252	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2999K 37487500	52	5.0 20 -0.62
CAM-NAO.= 42.20S 32.12W SWING= 251. PHASE= 83. EMIS-ANG.= 14. CAM-RAD.= 4738.2 KM. SUN AZM= 74.0													
LAC 111 WILHELM, ELGER, MEE ; >1/2 MOON SPHERE ; LAC 144 SCOTT, S. POLE NEARSIDE >6 LAC 57 KEPLER, ENCKE													
L 4 2	136	42.64S	27.40W	25	000	045435	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3003K 37537500	97	4.8 19 -0.00
CAM-NAO.= 42.16S 38.84W SWING= 295. PHASE= 83. EMIS-ANG.= 13. CAM-RAD.= 4742.2 KM. SUN AZM= 70.3													
LAC 111 WILHELM, ELGER, MEE ; >1/2 MOON SPHERE ; LAC 144 SCOTT, S. POLE NEARSIDE >6 LAC 57 KEPLER, ENCKE													
L 4 2	143	14.29S	41.41W	26	000	172822	5-21-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2719K 33987500	85	1.0 19 -0.8
CAM-NAO.= 14.41S 42.98W SWING= 271. PHASE= 74. EMIS-ANG.= 3. CAM-RAD.= 4458.2 KM. SUN AZM= 84.3													
LAC 75 LETHBRIDGE, F ; >1/2 MOON SPHERE ; LAC 128 BIELA, WATT ; LAC 23 RUMKER, SHARP 6 LAC 41 APENNINES, HAF													
L 4 2	166	71.31S	60.23W	30	000	161844	5-23-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3593K 44912500	101	3.4 7 -0.00
CAM-NAO.= 71.19S 82.44W SWING= 264. PHASE= 93. EMIS-ANG.= 10. CAM-RAD.= 5332.2 KM. SUN AZM= 66.4													
LAC 136 BAILLEY, K ; >1/2 MOON SPHERE ; LAC 129 M. AUSTRAL ; LAC 73 RICCIOLI, NE-ORIENTAL 6 LAC 93 M. HUMOR, GASS													



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LAC 128 61ELA.NAT11

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MIS		MAG		FR, PHOTO		PRIN. PT.		ORB		GET		GMT		M-DA-YR		CAMERA-LENS OR		FILM-EXPOSURE		ALTI SCALE AT		I I L T SUN SIDE	
SIGN		ROLL		UR		LAT.		#		TIMES-HR		M SEC				SENSOR		AND FILTER		TUDE		PRIN.	
#	#	MAIN		LONG.						(i=ESTIMATED)						TYPE				M=N.M.I		PT.	
L 4	1	184	35.185	69.32E	33	***	****	013032	5-25-67	LUNAR	URR	HI.	610MM	R&W	-	NONE	5790K	9491803	259	6.6	7	-..*	
		CAM. RAD. = 34.035		97.52E	SWING = 269.		PHASE = 113.		EMIS. ANG. = 30.		CAM. RAD. =		7529.2		KM.		SUN AZH = 275.9						
		LAC 115 FURNERUS, UKEN				; 1/4 MOONS		SPHRE				; LAC 62 M. UNDA		RUM, S. CRISIUM		6		LAC 63 NEFER, SCHURE					
L 4	1	185	35.275	69.30E	33	***	****	013036	5-25-67	LUNAR	URR	HI.	610MM	R&W	-	NONE	5790K	9491803	258	6.6	7	-..9D	
		CAM. RAD. = 34.035		97.52E	SWING = 269.		PHASE = 113.		EMIS. ANG. = 30.		CAM. RAD. =		7529.2		KM.		SUN AZH = 275.9						
		LAC 115 FURNERUS, UKEN				; 1/4 MOONS		SPHRE				; LAC 62 M. UNDA		RUM, S. CRISIUM		6		LAC 63 NEFER, SCHURE					

TOTAL PHOTOS IN THIS GROUP = 23

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO      W = APPROXIMATELY      NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,RIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZERO'S)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FW	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE,	
SUN	ROLL	OR	LAT.	LONG.	#	TIMES-HR	M SEC			SENSOR	AND FILTER	TUDE	" IN.	A7	ANG.	ANG.	FWD.	
#	#	MAIN				(ESTIMATED)				TYPE		M=N-HI	PT.		FR.	LAP		
												K=KM.			VERT		%	
L 4	1	5	71.50S	91.31E	6	000	0000	154618	5-11-67	LUNAR ORB HI.	610MM B&W	-	NONE	3513K	5759016	100	2.4 9	-0.0
			CAM-RAO.= 71.23S	76.27E				SwING= 267.		PHASE= 88.	EMIS-ANG.= 7.		CAM-RAO.= 5252.2 KM.			SUN AZH= 61.8		
			LAC 139 HELMHOLTZ,HALE														LAC 144 SCOTT,S.POL	
L 4	1	6	71.17S	91.33E	6	000	0000	154628	5-11-67	LUNAR ORB HI.	610MM B&W	-	NONE	3510K	5754098	97	2.4 9	-0.90
			CAM-RAO.= 71.13S	76.36E				SwING= 265.		PHASE= 88.	EMIS-ANG.= 7.		CAM-RAO.= 5249.2 KM.			SUN AZH= 61.9		
			LAC 139 HELMHOLTZ,HALE														LAC 144 SCOTT,S.POL	
L 4	1	8	70.49S	91.35E	6	000	0000	154648	5-11-67	LUNAR ORB HI.	610MM B&W	-	NONE	3505K	5745902	92	2.4 9	-0.90
			CAM-RAO.= 70.41S	76.54E				SwING= 260.		PHASE= 88.	EMIS-ANG.= 7.		CAM-RAO.= 5244.2 KM.			SUN AZH= 61.9		
			LAC 139 HELMHOLTZ,HALE														LAC 144 SCOTT,S.POL	
L 4	2	8	70.49S	91.37E	6	000	0000	154648	5-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3505K	43812500	92	2.4 9	-0.79	
			CAM-RAO.= 70.41S	76.55E				SwING= 259.		PHASE= 88.	EMIS-ANG.= 7.		CAM-RAO.= 5244.2 KM.			SUN AZH= 61.9		
			LAC 139 HELMHOLTZ,HALE														LAC 129 M.AUSTRAL,LYOT	
L 4	1	9	41.79S	96.20E	6	000	0000	162638	5-11-67	LUNAR ORB HI.	610MM B&W	-	NONE	2989K	49000000	91	4.2 25	-0.0
			CAM-RAO.= 42.02S	86.28E				SwING= 289.		PHASE= 76.	EMIS-ANG.= 12.		CAM-RAO.= 4728.2 KM.			SUN AZH= 65.1		
			LAC 116 M.AUSTRAL														LAC 130 E-MAR AUSTRAL	
L 4	1	10	41.42S	96.19E	6	000	0000	162648	5-11-67	LUNAR ORB HI.	610MM B&W	-	NONE	2987K	4896721	89	4.3 25	-0.90
			CAM-RAO.= 41.08S	86.30E				SwING= 287.		PHASE= 76.	EMIS-ANG.= 12.		CAM-RAO.= 4726.2 KM.			SUN AZH= 65.2		
			LAC 116 M.AUSTRAL														LAC 130 E-MAR AUSTRAL	
L 4	1	11	41.04S	96.19E	6	000	0000	162658	5-11-67	LUNAR ORB HI.	610MM B&W	-	NONE	2986K	4895082	87	4.3 25	-0.90
			CAM-RAO.= 41.04S	86.32E				SwING= 285.		PHASE= 76.	EMIS-ANG.= 12.		CAM-RAO.= 4725.2 KM.			SUN AZH= 65.4		
			LAC 116 M.AUSTRAL														LAC 130 E-MAR AUSTRAL	
L 4	1	12	40.67S	96.18E	6	000	0000	162708	5-11-67	LUNAR ORB HI.	610MM B&W	-	NONE	2984K	4891803	86	4.3 25	-0.90
			CAM-RAO.= 41.61S	86.34E				SwING= 283.		PHASE= 76.	EMIS-ANG.= 12.		CAM-RAO.= 4723.2 KM.			SUN AZH= 65.6		
			LAC 116 M.AUSTRAL														LAC 130 E-MAR AUSTRAL	
L 4	2	19S	15.03N	90.51E	6	000	0000	173017	5-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2740K	34250000	312	0.8 28	-0.3	
			CAM-RAO.= 14.14N	91.48E				SwING= 126.		PHASE= 60.	EMIS-ANG.= 2.		CAM-RAO.= 4479.2 KM.			SUN AZH= 98.0		
			DEGRADED NEGATIVE														LAC 129 M.AUSTRAL,LYOT	

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	F.LM-EXPOSURE AND FILTER	ALTI SCALE AT TUBE PRIN. M=N, HI PT.	TILT AZ ANG.	SUN SIDE, ANG. FND. LAP
L 4	1	325	71.40S	77.79E	8	000	154747	5-12-67 LUNAR ORB HI. 610MM B&W	- NONE	3505K	5745902	98 2.3 8 -...
CAM-RAD.= 71.24S 63.03E SWING= 266. PHASE= 88. EMIS-ANG.= 7. CAM-RAD.= 5244.2 KM. SUN AZH= 63.1												
DEGRADED NEGATIVE : LAC 139 HELMHOLTZ ; LAC 129 M.AUSTRAL ; LAC 128 BIELA, WATT & LAC 144 SCOTT, S. POLE												
L 4	1	335	41.84S	84.13E	8	000	162801	5-12-67 LUNAR ORB HI. 610MM B&W	- NONE	2985K	4893443	92 4.7 25 -...
CAM-RAD.= 42.02S 73.04E SWING= 289. PHASE= 77. EMIS-ANG.= 13. CAM-RAD.= 4724.2 KM. SUN AZH= 64.9												
DEGRADED NEGATIVE : LAC 116 M.AUSTRAL, JENN; SOUTHERN PART OF LAC 99 HUMHOLT, GIBB & EASTERN PART OF LAC 129 M.AUSTRAL												
L 4	1	38	42.64S	77.77E	9	000	042846	5-13-67 LUNAR ORB HI. 610MM B&W	- NONE	2982K	4888525	98 4.8 24 -...
CAM-RAD.= 42.02S 66.45E SWING= 295. PHASE= 78. EMIS-ANG.= 13. CAM-RAD.= 4721.2 KM. SUN AZH= 64.8												
LASTERN PART OF LAC 115 FURNERIOUS ; LAC 129 M.AUSTRAL ; LAC 114 M.AUSTRAL ; LAC 99 HUMHOLT, GIBBS & LAC 98 PETAVIUS,												
L 4	2	38	42.63S	77.77E	9	000	042846	5-13-67 LUNAR ORB LO.F=80MM B&W	- NONE	2982K	37275000	98 4.8 24 -...
CAM-RAD.= 42.01S 66.45E SWING= 295. PHASE= 78. EMIS-ANG.= 13. CAM-RAD.= 4721.2 KM. SUN AZH= 64.8												
LAC 115 FURNERIOUS ; >1/2 MOON SPHERE ; LAC 140 SCHRODING ; LAC 129 M.AUSTRAL, LYOT & LAC 80 LANGRENUS, M.F												
L 4	1	44	72.12S	69.06E	10	000	154924	5-13-67 LUNAR ORB HI. 610MM B&W	- NONE	3498K	5734426	107 3.0 9 -...
CAM-RAD.= 71.27S 50.06E SWING= 275. PHASE= 89. EMIS-ANG.= 9. CAM-RAD.= 5237.2 KM. SUN AZH= 59.6												
LAC 139 HELMHOLTZ ; LAC 129 M.AUSTRAL ; LAC 128 BIELA, WATT ; LAC 144 SCOTT, S. POLE NEAR SIDE > 80S & LAC 145 S. POLE FARST												
L 4	1	45*	42.42S	71.80E	10	000	162932	5-13-67 LUNAR ORB HI. 610MM B&W	- NONE	2979K	4883607	96 5.1 25 -...
CAM-RAD.= 42.04S 59.88E SWING= 293. PHASE= 78. EMIS-ANG.= 14. CAM-RAD.= 4718.2 KM. SUN AZH= 64.7												
LAC 115 FURNERIOUS ; LAC 129 M.AUSTRAL, LYOT & S. E. PART OF LAC 98 PETAVIUS, HOLDFH												
L 4	1	52	42.91S	63.81E	11	000	043024	5-14-67 LUNAR ORB HI. 610MM B&W	- NONE	2976K	4878689	99 4.5 23 -...
CAM-RAD.= 42.06S 53.33E SWING= 297. PHASE= 78. EMIS-ANG.= 12. CAM-RAD.= 4715.2 KM. SUN AZH= 66.0												
LAC 115 FURNERIOUS, OKEN ; LAC 128 BIELA, WATT ; LAC 129 M.AUSTRAL ; LAC 114 RHEITA, JA ; SOUTHERN PART OF LAC 98 PETAVIUS, H												
L 4	1	56	71.58S	54.40E	12	000	155118	5-14-67 LUNAR ORB HI. 610MM B&W	- NONE	3494K	5727869	100 2.7 9 -...
CAM-RAD.= 71.36S 37.31E SWING= 269. PHASE= 89. EMIS-ANG.= 8. CAM-RAD.= 5233.2 KM. SUN AZH= 62.0												
LAC 138 DANZINUS ; LAC 139 HELMHOLTZ ; LAC 128 BIELA, WATT ; LAC 129 M.AUSTRAL, LYOT & LAC 144 SCOTT, S. POLE												
L 4	1	59	41.75S	55.05E	12	000	163122	5-14-67 LUNAR ORB HI. 610MM B&W	- NONE	2975K	4877049	89 3.6 22 -...
CAM-RAD.= 42.11S 46.79E SWING= 287. PHASE= 78. EMIS-ANG.= 10. CAM-RAD.= 4714.2 KM. SUN AZH= 68.5												
LAC 114 RHEITA, JA ; LAC 115 FURNERIOUS ; LAC 128 BIELA, WATT ; LAC 129 M.AUSTRAL, LYOT & LAC 98 PETAVIUS, HOLD												
L 4	1	64	42.56S	50.55E	13	000	043230	5-15-67 LUNAR ORB HI. 610MM B&W	- NONE	2973K	4873770	96 4.4 23 -...
CAM-RAD.= 42.14S 40.27E SWING= 294. PHASE= 79. EMIS-ANG.= 12. CAM-RAD.= 4712.2 KM. SUN AZH= 67.0												
LAC 114 RHEITA, JA ; LAC 115 FURNERIOUS ; LAC 128 BIELA, WATT ; LAC 129 M.AUSTRAL, LYOT & LAC 97 FRACASTORIUS,												
L 4	1	71	43.69S	46.67E	14	000	163344	5-15-67 LUNAR ORB HI. 610MM B&W	- NONE	2972K	4872111	103 5.5 24 -...
CAM-RAD.= 42.22S 33.74E SWING= 301. PHASE= 80. EMIS-ANG.= 15. CAM-RAD.= 4711.2 KM. SUN AZH= 64.7												
LAC 114 RHEITA, JA ; LAC 115 FURNERIOUS ; LAC 128 BIELA, WATT ; LAC 129 M.AUSTRAL, LYOT & LAC 97 FRACASTORIUS,												
L 4	2	62	72.37S	32.44E	16	000	155638	5-16-67 LUNAR ORB LO.F=80MM B&W	- NONE	3503K	43787500	106 3.1 9 -...
CAM-RAD.= 71.62S 12.04E SWING= 273. PHASE= 90. EMIS-ANG.= 9. CAM-RAD.= 5242.2 KM. SUN AZH= 59.4												
LAC 138 DANZINUS ; >1/2 MOON SPHERE ; LAC 140 SCHRODING ; LAC 131 PRANDTL PLANK & LAC 129 M.AUSTRAL, LYOT												

SUN ROLL		FR, PHOTO	PRIN. PT.	ORB	GET	GHT	N-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTITUDE AT T	SCALE	AT T	L T	SUN SIDE		
#	#	OR	LAT.	#	TIMES-HR M SEC			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	FWO.		
#	#	MAIN	LUNG.		(ESTIMATED)			TYPE		M=N.MI	PT.	FR.	ANG.	LAP		
										K=KM.		VERT		R, R		
L 4	2	88	42.69S	24.94E	17	***	043838	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2973K	37162500	9A	4.6 22	-..
		CAM-NAU-*	42.26S	14.18E			SWING= 295.	PHASE= 80.	EMIS-ANG.= 13.		CAM-RAD.=	4712.2 KM.		SUN AZH= 67.8		
		LAC 113 MAURULYCUS, KAB. LEVI					: >1/2 MOON SPHERE	: LAC 140 SCHRODING	: LAC 129 M.AUSTRA		: LAC 79 COLOM			LAC AN J.CAF		
L 4	2	95	42.53S	18.70E	18	***	164034	5-17-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2975K	37187500	95	4.7 22	-..
		CAM-NAU-*	42.27S	7.64E			SWING= 294.	PHASE= 80.	EMIS-ANG.= 13.		CAM-RAD.=	4714.2 KM.		SUN AZH= 67.9		
		LAC 113 MAURULYCUS, KAB. LEVI					: >1/2 MOON SPHERE	: LAC 140 SCHRODING	: LAC 129 M.AUSTRA		: LAC 78 THEOP			LAC 112 TYCH		
L 4	2	100	42.71S	12.29E	19	***	044237	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2978K	37275000	96	4.8 21	-..
		CAM-NAU-*	42.25S	1.05E			SWING= 295.	PHASE= 81.	EMIS-ANG.= 13.		CAM-RAD.=	4717.2 KM.		SUN AZH= 68.1		
		LAC 113 MAURULYCUS, KAB. LEVI					: >1/2 MOON SPHERE	: LAC 140 SCHRODING	: LAC 127 M.AUSTRA		: LAC 77 PTOLM			LAC AD LANGR		
L 4	2	106	72.16S	9.45E	20	***	160405	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3534K	44175000	104	3.4 9	-..
		CAM-NAU-*	71.71S	13.37W			SWING= 272.	PHASE= 90.	EMIS-ANG.= 10.		CAM-RAD.=	5273.2 KM.		SUN AZH= 58.0		
		LAC 137 NEPTUN, HO					: >1/2 MOON SPHERE	: LAC 129 M.AUSTRA	: LAC 131 PRANDTL					LAC 144 SCOTT, S. POLT		
L 4	2	107	42.40S	6.45E	20	***	164442	5-18-67	LUNAR ORB LO.F=80MM B&W	-	NONE	2982K	37275000	94	5.0 22	-..
		CAM-NAU-*	42.26S	5.42W			SWING= 293.	PHASE= 81.	EMIS-ANG.= 14.		CAM-RAD.=	4721.2 KM.		SUN AZH= 67.9		
		LAC 112 TYCHU, STUFLEH					: >1/2 MOON SPHERE	: LAC 59 M.VAPORUM, HYGINUS						LAC 79 COLOMB, NE. M		
L 4	2	130	65.04S	25.85W	24	***	161143	5-20-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3575K	44687500	4A	4.1 9	-..
		CAM-NAU-*	71.62S	40.64W			SWING= 211.	PHASE= 91.	EMIS-ANG.= 13.		CAM-RAD.=	5314.2 KM.		SUN AZH= 69.3		
		LAC 137 NEPTUN, HO					: >1/2 MOON SPHERE	: LAC 131 PRANDTL	: LAC 93 M.HUMOR., GASSENDI					LAC 113 MAURULYCUS, R		
L 4	2	154	71.70S	33.52W	28	***	161555	5-22-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3613K	45162500	105	5.2 11	-..
		CAM-NAU-*	72.07S	69.24W			SWING= 268.	PHASE= 94.	EMIS-ANG.= 16.		CAM-RAD.=	5352.2 KM.		SUN AZH= 52.2		
		LAC 137 NEPTUN, HO					: >1/4 MOONS SPHERE	: LAC 129 M.AUSTRA	: LAC 74 GHIMALDI, BILLY					LAC 93 M.HUMOR., GASS		
L 4	2	166	71.31S	60.23W	30	***	161844	5-23-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3593K	44912500	101	3.4 7	-..
		CAM-NAU-*	71.19S	82.14W			SWING= 264.	PHASE= 93.	EMIS-ANG.= 10.		CAM-RAD.=	5332.2 KM.		SUN AZH= 66.4		
		LAC 136 GAILLEY, K					: >1/2 MOON SPHERE	: LAC 129 M.AUSTRA	: LAC 73 RICCIOLI, NE. ORIENTAL					LAC 93 M.HUMOR., GASS		
L 4	2	179	69.52S	74.07W	32	***	161924	5-24-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3592K	44900000	86	3.6 7	-..
		CAM-NAU-*	71.38S	94.22W			SWING= 246.	PHASE= 94.	EMIS-ANG.= 11.		CAM-RAD.=	5331.2 KM.		SUN AZH= 68.2		
		LAC 136 GAILLEY, K					: >1/2 MOON SPHERE	: LAC 129 M.AUSTRA	: LAC 108 M.ORIENTISW 1/3 W					LAC 93 M.HUMOR., GASS		
L 4	1	184	35.18S	69.32E	33	***	013032	5-25-67	LUNAR ORB HI. 810MM B&W	-	NONE	5790K	9491803	259	6.6 7	-..
		CAM-NAU-*	34.03S	97.52E			SWING= 269.	PHASE= 113.	EMIS-ANG.= 30.		CAM-RAD.=	7529.2 KM.		SUN AZH= 275.8		
		LAC 115 FURNERIUS, UKEN					: >1/4 MOONS SPHERE	: LAC 62 M.UNDARUM, S. CRISTUM						LAC 63 NEPER, SCHURE		
L 4	2	184	35.18S	69.32E	33	***	013032	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	5790K	72374999	259	6.6 7	-..
		CAM-NAU-*	34.03S	97.52E			SWING= 269.	PHASE= 113.	EMIS-ANG.= 30.		CAM-RAD.=	7529.2 KM.		SUN AZH= 275.8		
		LAC 115 FURNERIUS					: >1/2 MOON SPHERE	: LAC 114 KHEITA, JA	: LAC 61 TARUNTIUS, LYELL					LAC 44 CLEOMEDES, M.C		
L 4	1	185	35.27S	69.30E	33	***	013036	5-25-67	LUNAR ORB HI. 810MM B&W	-	NONE	5790K	9491803	258	6.6 7	-..
		CAM-NAU-*	34.05S	97.52E			SWING= 269.	PHASE= 113.	EMIS-ANG.= 30.		CAM-RAD.=	7529.2 KM.		SUN AZH= 275.9		
		LAC 115 FURNERIUS, UKEN					: >1/4 MOONS SPHERE	: LAC 62 M.UNDARUM, S. CRISTUM						LAC 63 NEPER, SCHURE		

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LAC 129 M.AUSTRALE,LYOT

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MIS	MAG	PHOTO	PRIN.PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T	L	T	SUN	SIDE
SUN	ROLL	OR	LAT.	#	TIMES-HR	M	SEC	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.		
#	#	MAIN	LONG.		(#-ESTIMATED)			TYPE		M=N,M	PT.	FR.	VERT				
L 4	2	185° 35.27S	69.30E	33	000	0000	013036	5-25-67	LUNAR ORB LO.F=80MM B&W	-	NONE	5790K	72374979	250	6.6	7	-00
		CAM.HAD.= 34.055	97.52E		SWING= 269.		PHASE= 113.	EMIS.ANG.= 30.	CAM.RAD.=	7529.2	KM.	SUN	AZM=275.9				
		LAC 115 FURNERIUS 1	>1/2 HOON	SPHERE 1	LAC 114 RHEITA,JA		LAC 44 CLEUHEDES,M,CHIS.										

TOTAL PHOTOS IN THIS GROUP = 34

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS. S = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-),(+),(.),OR(U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. R=BACKET MOUNTED; G= CAN. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTAR 2.8 LENS;  
HSEB=HASSELBLAD; MAUR=MAUREH; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOTEN,SUNAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
10 = AS EXPOS SPEED = 1/1000 (OR \* = 1/0 ZERUS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NFG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR,PHOTO OR LAT.	PRIN,PT. LAT.	ORB #	GET TIMES-HR	GMT H SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=N,M1 K=KM.	SCALE AT PRIN. PT.	T I AZ	L T ANG.	SUN ANG.	SIDE, ANG. FWD.
#	#	MAIN	LONG.		[I=ESTIMATED]										
L 4	1	5	71.50S	91.31E	6	000 000	154618	5-11-67 LUNAR ORB HI. 610MM B&W	- NONE	3513K	5759016	100	2.4	9	-0.0
CAM-HAD.= 71.23S 76.27E SWING= 267. PHASE= 88. EMIS.ANG.= 7. CAM-RAD.= 5252.2															
LAC 139 HELMHOLTZ,HALE ; LAC 130 E.MAR AUSTRAL,PRIESTL; LAC 129 H.AUSTRAL,LYOT															
K LAC 144 SCOTT,S+POL															
L 4	1	9	41.79S	96.20E	6	000 000	162638	5-11-67 LUNAR ORB HI. 610MM B&W	- NONE	2989K	4900000	91	4.2	25	-0.0
CAM-HAD.= 42.02S 86.28E SWING= 289. PHASE= 76. EMIS.ANG.= 12. CAM-RAD.= 4728.2															
LAC 116 H.AUSTRAL ; LAC 99 HUMBOLT,GI ; LAC 100 CURIE ; LAC 129 H.AUSTRAL,LYOT															
K LAC 130 E.MAR AUSTRAL															
L 4	1	10	41.42S	96.19E	6	000 000	162648	5-11-67 LUNAR ORB HI. 610MM B&W	- NONE	2987K	4896721	89	4.3	25	-0.90
CAM-HAD.= 41.88S 86.31E SWING= 287. PHASE= 76. EMIS.ANG.= 12. CAM-RAD.= 4726.2															
LAC 116 H.AUSTRAL ; LAC 99 HUMBOLT,GI ; LAC 100 CURIE ; LAC 129 H.AUSTRAL,LYOT															
K LAC 130 E.MAR AUSTRAL															
L 4	1	11	41.04S	96.19E	6	000 000	162658	5-11-67 LUNAR ORB HI. 610MM B&W	- NONE	2986K	4895082	87	4.3	25	-0.90
CAM-HAD.= 41.74S 86.32E SWING= 285. PHASE= 76. EMIS.ANG.= 12. CAM-RAD.= 4725.2															
LAC 116 H.AUSTRAL ; LAC 99 HUMBOLT,GI ; LAC 100 CURIE ; LAC 129 H.AUSTRAL,LYOT															
K LAC 130 E.MAR AUSTRAL															
L 4	1	12	40.67S	96.18E	6	000 000	162708	5-11-67 LUNAR ORB HI. 610MM B&W	- NONE	2984K	485 003	86	4.3	25	-0.90
CAM-HAD.= 41.61S 86.34E SWING= 283. PHASE= 76. EMIS.ANG.= 12. CAM-RAD.= 4723.2															
LAC 116 H.AUSTRAL ; LAC 99 HUMBOLT,GI ; LAC 100 CURIE ; LAC 129 H.AUSTRAL,LYOT															
K LAC 130 E.MAR AUSTRAL															

TOTAL PROTUS IN THIS GROUP = 5

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (O) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; 2P, 2B, 2S = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T	I	L	T	SUN	SIDE
SIGN	ROLL	OR	LAT.				TIMES-HR	M	SEC	SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FAD.			
"	"	MAIN	LON.				(ESTIMATED)			TYPE		M=N.MI	PT.		FN.	LAP				
												K=KM.			VERT					
L 4	2	42	72-075	32-46E	16	**	****	155638	5-16-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	3503K	43787500	106	3.1	9	-..	
			CAM.RAD.= 71.025	12.04E			SWING= 273.			PHASE= 90.	EMIS.ANG.= 9.		CAM.RAD.=	5242.2 KM.			SUN AZM= 59.4			
			LAC 138 MANZINUS.				>1/2 MOON SPHERE			LAC 140 SCHRUDING							6	LAC 129 M.AUSTRALF.		
L 4	2	44	72-115	20-19E	18	**	****	160008	5-17-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	3517K	43962500	103	3.2	9	-..	
			CAM.RAD.= 71.705	0.67W			SWING= 270.			PHASE= 90.	EMIS.ANG.= 10.		CAM.RAD.=	5256.2 KM.			SUN AZM= 59.4			
			LAC 138 MANZINUS.				>1/2 MOON SPHERE			LAC 126 CLAVIUS.M							6	LAC 145 S.POLE FARSI		
L 4	2	106	72-165	9-45E	20	**	****	160406	5-18-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	3534K	44175000	104	3.4	9	-..	
			CAM.RAD.= 71.715	13.37W			SWING= 272.			PHASE= 90.	EMIS.ANG.= 10.		CAM.RAD.=	5273.2 KM.			SUN AZM= 58.0			
			LAC 137 NEWTON.HU				>1/2 MOON SPHERE			LAC 129 M.AUSTRAL							6	LAC 144 SCOTT.S.POLE		
L 4	2	118	72-495	6-99W	22	**	****	160805	5-19-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	3555K	44437500	107	3.0	8	-..	
			CAM.RAD.= 71.675	26.89W			SWING= 275.			PHASE= 90.	EMIS.ANG.= 9.		CAM.RAD.=	5294.2 KM.			SUN AZM= 62.0			
			LAC 137 NEWTON.HU				>1/2 MOON SPHERE			LAC 131 PRANDTL							6	LAC 94 PITATUS.M.NUR		
L 4	2	123	1-13N	162-38E	22	**	****	232754	5-19-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	6151K	76887499	44	4.4	**	-..	
			CAM.RAD.= 00	161-26E			SWING= 64.			PHASE= 111.	EMIS.ANG.= 2.		CAM.RAD.=	7.90.2 KM.			SUN AZM= 271.1			
			LAC 67 SPENCER				LAC 131 PRANDTL			LAC 6							6	LAC 82 ST.M.SMYTHI.P		
L 4	2	130	65-025	25-85W	24	**	****	161143	5-20-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	3575K	44687500	46	4.1	9	-..	
			CAM.RAD.= 71.625	40.84W			SWING= 211.			PHASE= 91.	EMIS.ANG.= 13.		CAM.RAD.=	5314.2 KM.			SUN AZM= 69.3			
			LAC 137 NEWTON.HU				>1/2 MOON SPHERE			LAC 131 PRANDTL							6	LAC 113 MAUROLYCUS.H		
L 4	2	178	33-885	82-20E	32	**	****	132933	5-24-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	5796K	72449999	264	5.3	2	-..	
			CAM.RAD.= 33.985	104-19E			SWING= 275.			PHASE= 112.	EMIS.ANG.= 23.		CAM.RAD.=	7535.2 KM.			SUN AZM= 271.9			
			LAC 116 M.AUSTRALF.JENNER				>1/2 MOON SPHERE			LAC 97 FRACASTORIUS.S.NE							6	LAC 45 PLUTARCH.H		

TOTAL PHOTOS IN THIS GROUP = 7

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, \* = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SA-A = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS PLANAR, BIOGEN, SONAR; FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 = AS EXPOS SPEED = 1/1000 (OR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LAT.	PT. LONG.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE M=N.MI K=KM.	AT PT.	T PRIN.	I AZ	L ANG.	T ANG.	SUN FR.	SIDE ANG.	FWD. LAP
L 5	1	65° 48.875	168.65N	35	***	***	114922	8-12-67	LUNAR ORB HI, 610MM B&W	-	NONE	1192K	1954098	246	19.9	**	-	**			
CAM-RAU.= 44.715 147.27N SWING= 82. PHASE= 128. EMIS-ANG.= 35.												CAM-RAU.= 2931.2 KM.		SUN AZM=268.1							
DEGRADED NEGATIVE; N. W. PART OF LAC 133 LEMAITRE; N. E. PART OF LAC 132 ABBE, HESS														LAC 120 OPPENHEIMER							
L 5	2	65° 48.775	168.61N	35	***	***	114922	8-12-67	LUNAR ORB LO, F=80MM B&W	-	NONE	1192K	14900000	246	19.9	**	-	**			
CAM-RAU.= 44.725 147.27N SWING= 83. PHASE= 128. EMIS-ANG.= 35.												CAM-RAU.= 2931.2 KM.		SUN AZM=268.0							
LAC 133 LEMAITRE; 1/4 MOONS SPHERE; LAC 121 APOLLO; LAC 120 OPPENHEIMER														LAC 132 ABBE, HESS							

TOTAL PHOTOS IN THIS GROUP = 2



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (C) = NO INFO      W = APPROXIMATELY      NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREK; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 1/0 AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

SUN	MAG	FR.	PHOTO	PRIN.PT.	ORB	GET	GHT	H-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T	I	L	T	SUN	SIDF.	
																				TYPE
#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
L 5	1	26	27.055	125.06W	7	***	****	014205	8-08-67	LUNAR ORB HI. 610MM B&W	-	NONE	5069K	8304836	258	9.4	5	-	***	
CAM.RAD.= 25.625 90.85W SWING= 89. PHASE= 125. EMIS.ANG.= 40. CAM.RAD.= 6808.2 KM. SUN AZM=274.4																				
LAC 107 LILLERMAN ; 1/4 MOONS SPHERE ; LAC 70 N.W.HERTZS ; LAC 71 N.E.HERTZSPRUNG.GRIGG ; LAC 134 BOLTZMANN																				
L 5	1	43	47.535	151.45W	25	***	****	035821	8-11-67	LUNAR ORB HI. 610MM B&W	-	NONE	1191K	1452459	252	20.2	**	-	***	
CAM.RAD.= 44.695 129.44W SWING= 90. PHASE= 130. EMIS.ANG.= 36. CAM.RAD.= 2930.2 KM. SUN AZM=267.4																				
DEGRADED NEGATIVE ; SOUTHERN PART OF LAC 121 APOLLO & NORTHERN PART OF LAC 133 LEMAITRE																				
L 5	2	43	47.435	151.42W	25	***	****	035821	8-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1191K	14887500	252	20.2	**	-	***	
CAM.RAD.= 44.905 129.44W SWING= 91. PHASE= 130. EMIS.ANG.= 36. CAM.RAD.= 2930.2 KM. SUN AZM=267.4																				
LAC 121 APOLLO ; 1/4 MOONS SPHERE ; LIMB OR HORIZON ; LAC 106 MARIOTTE ; LAC 134 BOLTZMANN																				
L 5	1	65	48.875	168.65W	35	***	****	114922	8-12-67	LUNAR ORB HI. 610MM B&W	-	NONE	1192K	1954098	246	19.9	**	-	***	
CAM.RAD.= 44.715 147.27W SWING= 82. PHASE= 128. EMIS.ANG.= 35. CAM.RAD.= 2931.2 KM. SUN AZM=268.1																				
DEGRADED NEGATIVE ; N. W. PART OF LAC 133 LEMAITRE ; N. E. PART OF LAC 132 ARBE,HESS ; LAC 120 OPPENHEIMER																				
L 5	2	65	48.775	168.61W	35	***	****	114922	8-12-67	LUNAR ORB LO.F=80MM B&W	-	NONE	1192K	14900000	246	19.9	**	-	***	
CAM.RAD.= 44.725 147.27W SWING= 83. PHASE= 128. EMIS.ANG.= 35. CAM.RAD.= 2931.2 KM. SUN AZM=268.0																				
LAC 133 LEMAITRE ; 1/4 MOONS SPHERE ; LAC 121 APOLLO ; LAC 120 OPPENHEIMER ; LAC 132 ARBE,HESS																				

TOTAL PHOTOS IN THIS GROUP = 5

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, % = ALMOST UNUSABLE PHOTOS.  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-), (.), ( ), OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
HSB= HASSELBLAD; MAUR= MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
10 = AS EXPOS SPEED = 1/1000 (OR 0 = TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG #	FR. #	PHOTO LAT.	PRIN. LAT.	PT. N	ORB H	GET TIMES	GMT HR	H-DA-YR M SEC	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT1 TUBE	SCALE AT PRIN. M=H.MI K=KM.	T I L T AZ PT. FR. VERT	SUN SIDE. ANG. ANG. FWD. LAP S. W				
L 4	2	1945	42.975	86.51W	34	000	0000	170147	5-25-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3003K	37537500	100	5.3	16	-00
CAM-NAO.= 42.015 99.09W SWING= 297. PHASE= 88. EMIS-ANG.= 15. CAM-RAD.= 4742.2 KM. SUN AZH= 73.3																			
DEGRADED NEGATIVE ; LAC 123 STERLOV ; >1/2 MOON SPHERE ; LAC 134 BOLTZMANN 6 LAC 90 LOWELL																			
L 5	1	26	27.65S	125.06W	7	000	0000	014205	8-08-67	LUNAR	ORB HI. 610MM B&W	-	NONE	5769K	8309816	258	9.4	5	-00
CAM-NAO.= 25.025 90.85W SWING= 89. PHASE= 125. EMIS-ANG.= 40. CAM-RAD.= 6808.2 KM. SUN AZH= 274.4																			
LAC 107 ELLERMAN ; 1/4 MOONS SPHERE ; LAC 70 N.W.HERTZS ; LAC 71 N.E.HERTZSPRUNG,GRIGG 6 LAC 134 BOLTZMANN																			
L 5	1	29	59.12N	147.18W	9	000	0000	215131	8-08-67	LUNAR	ORB HI. 610MM B&W	-	NONE	2548K	4177049	284	11.0	11	-00
CAM-NAO.= 59.08N 113.56W SWING= 90. PHASE= 107. EMIS-ANG.= 28. CAM-RAD.= 4287.2 KM. SUN AZH= 254.7																			
LAC 19 CANNOT NOW ; 1/4 MOONS SPHERE ; LAC 108 M.ORTJENS ; LAC 134 BOLTZMANN 6 LAC 20 COULOMB																			
L 5	2	43	47.43S	151.42W	25	000	0000	035821	8-11-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	1191K	14887500	252	20.2	00	-00
CAM-NAO.= 44.90S 129.44W SWING= 91. PHASE= 130. EMIS-ANG.= 36. CAM-RAD.= 2930.2 KM. SUN AZH= 267.4																			
LAC 121 APOLLO ; 1/4 MOONS SPHERE ; LIMB OR HORIZON ; LAC 106 HARTOTTE 6 LAC 134 BOLTZMANN																			

TOTAL PHOTOS IN THIS GROUP = 4

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 CAMERA-LENS AS FOLLOWS: SH.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS; PLANAR, BIOGEN, SONAR; FOCAL LENGTH(MM) & MAX.F-OPENING  
 10 AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LAT.	PT. LONG.	ORB M	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TIDE	SCALE PRIN.	AT PT.	T AZ	I ANG.	L ANG.	SUN FR.	SIDE ANG.	FWD. LAP
L 4	1	186	42.275	81.34W	33	***	050123	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	3006K	4927869	95	4.7	16	-	..		
CAM.NAD.= 41.96S 92.48W SWING= 293. PHASE= 87. EMIS.ANG.= 13. CAM.RAD.= 4745.2 KM. SUN AZH= 74.2																				
LAC 109 PIAZZI, V. BOUVARD ; LAC 135 PINGRE N. HAUSEN ; LAC 124 PHOCLIDES																				
L 4	1	173	63.89S	85.97W	34	***	162428	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	3519K	5768852	70	4.8	9	-	..		
CAM.NAD.= 68.87S 107.44W SWING= 232. PHASE= 95. EMIS.ANG.= 15. CAM.RAD.= 5258.2 KM. SUN AZH= 68.6																				
LAC 135 PINGRE N. HAUSEN ; LAC 124 PHOCLIDES ; LAC 109 PIAZZI, V. ; LAC 123 STEKLOV ; LAC 143 S. HA & LAC 136 BAIL																				
L 4	2	173	63.88S	85.98W	34	***	162428	5-25-67	LUNAR ORB LO. F=80MM B&W	-	NONE	3519K	43987500	70	4.8	9	-	..		
CAM.NAD.= 68.87S 107.44W SWING= 232. PHASE= 95. EMIS.ANG.= 15. CAM.RAD.= 5258.2 KM. SUN AZH= 68.6																				
LAC 135 PINGRE N. HAUSEN ; W>1/2 MOON SPHERE ; LAC 139 HELMHOLZ ; LAC 90 LOWELL ; LAC 74 GRIMA & LAC 127 HOMH																				
L 4	1	194	42.97S	86.50W	34	***	170147	5-25-67	LUNAR ORB HI. 610MM B&W	-	NONE	3003K	4922951	100	5.3	16	-	..		
CAM.NAD.= 42.61S 99.09W SWING= 297. PHASE= 88. EMIS.ANG.= 15. CAM.RAD.= 4742.2 KM. SUN AZH= 73.3																				
LAC 123 STEKLOV ; LAC 109 PIAZZI, V. BOUVARD ; LAC 135 PINGRE N. HAUSEN ; LAC 124 PHOCLIDES																				
L 5	1	24	26.54N	120.17W	5	***	135051	8-07-67	LUNAR ORB HI. 610MM B&W	-	NONE	5009K	8211475	281	8.9	8	-	..		
CAM.NAD.= 24.01N 89.35W SWING= 90. PHASE= 119. EMIS.ANG.= 37. CAM.RAD.= 6748.2 KM. SUN AZH= 267.8																				
LAC 53 OHM FENSHAN ; W1/4 MOONS SPHERE ; LAC 135 PINGRE N. HAUSEN ; LAC 20 COULOMB ; LAC 89 S.E. HERTZS																				

TOTAL PHOTOS IN THIS GROUP = 5

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

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 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTAR = EKTAR 2.8 LENS;  
 HSB = HASSELBLAD; MAUR = MAURER; ZP, ZB, ZS = ZEISS LENS (PLANAR, BIOGEN, SONAR); FOCAL LENGTH (MM) & MAX. F-OPENING  
 10 = AS EXPOS. SPEED = 1/1000 (OR 0 = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE	AT	T I L T	SUN	SIDE.
SION	KULL	OR	LAT.	N	TIMES-HR	M SEC	(ESTIMATED)			SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	ANG.	FWD.
"	"	MAIN	LUNG.							TYPE		M=N.MI	PT.	FR.	LAP		
												K=KM.			VERT	8. 8	
L 4	1	130	65.025	25.05W	24	00	0000	161143	5-20-67	LUNAR ORB HI, 610MM B&W	-	NONE	3575K	5860656	46	4.1	9
			CAM. RAD. = 71.635	40.64W			SWING = 211.		PHASE = 91.	EMIS. ANG. = 13.		CAM. RAD. = 5314.2 KM.			SUN AZM = 69.3		
			LAC 137 NEWTON, HD	LAC 136 BAILLEY, K	LAC 126 CLAVIUS, H	LAC 125 SCHILLER, SEGNER									6	LAC 111 WILHELM, ELGE	
L 4	2	137	14.975	35.29W	25	00	0000	052651	5-21-67	LUNAR ORB LO, F=80MM B&W	-	NONE	2718K	33975000	119	.7	19
			CAM. RAD. = 14.405	36.34W			SWING = 305.		PHASE = 73.	EMIS. ANG. = 3.		CAM. RAD. = 4457.2 KM.			SUN AZM = 84.1		
			LAC 75 LETKUNNE, F	W>1/2 MOON SPHERE	LAC 136 BAILLEY, K	LAC 139 HELMHOLZ, HALE									6	LAC 141 RAYLEIGH	
L 4	2	1465	2.79N	136.09E	26	00	0000	233025	5-21-67	LUNAR ORB LO, F=80MM B&W	-	NONE	6148K	76849999	25	.8	00
			CAM. RAD. = .16N	134.86E			SWING = 45.		PHASE = 109.	EMIS. ANG. = 4.		CAM. RAD. = 7887.2 KM.			SUN AZM = 271.7		
			DEGRADED NEGATIVE	LAC 66 MENDELEEV	W1/4 MOONS SPHERE	LAC 136 BAILLEY, KIRCHER									6	LAC 19 CARNOT ROWLAN	
L 4	2	149	15.055	48.76W	27	00	0000	052940	5-22-67	LUNAR ORB LO, F=80MM B&W	-	NONE	2720K	34000000	127	.7	18
			CAM. RAD. = 14.405	49.64W			SWING = 313.		PHASE = 74.	EMIS. ANG. = 2.		CAM. RAD. = 4459.2 KM.			SUN AZM = 84.4		
			LAC 75 LETKUNNE, F	W>1/2 MOON SPHERE	LAC 136 BAILLEY, K	LAC 38 SELEUCUS, SCHROTER									6	LAC 25 CASSINI, ALPS	
L 4	1	154	71.705	33.51W	28	00	0000	161555	5-22-67	LUNAR ORB HI, 610MM B&W	-	NONE	3613K	5922951	105	5.2	11
			CAM. RAD. = 72.085	69.24W			SWING = 268.		PHASE = 94.	EMIS. ANG. = 16.		CAM. RAD. = 5352.2 KM.			SUN AZM = 52.2		
			LAC 137 NEWTON, HD	LAC 136 BAILLEY, K	LAC 125 SCHILLER, I	LAC 138 MANZINUS, SCHMBGER									6	LAC 139 HELMHOLZ, HAL	
L 4	2	156	14.875	55.80W	28	00	0000	173043	5-22-67	LUNAR ORB LO, F=80MM B&W	-	NONE	2722K	34025000	135	.4	17
			CAM. RAD. = 14.395	56.29W			SWING = 321.		PHASE = 74.	EMIS. ANG. = 1.		CAM. RAD. = 4461.2 KM.			SUN AZM = 84.7		
			LAC 74 GRIMALDI, B	W>1/2 MOON SPHERE	LAC 136 BAILLEY, K	LAC 22 SE. GERARD, BUNSEN, HARDING									6	LAC 40 TIMOCHARIS, LA	
L 4	2	161	15.135	61.98W	29	00	0000	053134	5-23-67	LUNAR ORB LO, F=80MM B&W	-	NONE	2723K	34037500	129	.8	17
			CAM. RAD. = 14.365	62.94W			SWING = 315.		PHASE = 75.	EMIS. ANG. = 2.		CAM. RAD. = 4462.2 KM.			SUN AZM = 84.7		
			LAC 74 GRIMALDI, B	W>1/2 MOON SPHERE	LAC 136 BAILLEY, K	LAC 22 SE. GERARD, BUNSEN, HARDING									6	LAC 58 COPERNICUS, RE	
L 4	1	166	71.315	60.23W	30	00	0000	161844	5-23-67	LUNAR ORB HI, 610MM B&W	-	NONE	3593K	5890164	101	3.4	7
			CAM. RAD. = 71.195	62.44W			SWING = 264.		PHASE = 93.	EMIS. ANG. = 10.		CAM. RAD. = 5332.2 KM.			SUN AZM = 66.4		
			LAC 136 BAILLEY, K	LAC 124 PHUCYLIIDE	LAC 110 SCHICKARD	LAC 137 NEWTON, MORETUS									6	LAC 144 SCOTT, S. POLE	
L 4	2	166	71.315	60.23W	30	00	0000	161844	5-23-67	LUNAR ORB LO, F=80MM B&W	-	NONE	3593K	44912500	101	3.4	7
			CAM. RAD. = 71.195	62.44W			SWING = 264.		PHASE = 93.	EMIS. ANG. = 10.		CAM. RAD. = 5332.2 KM.			SUN AZM = 66.4		
			LAC 136 BAILLEY, K	W>1/2 MOON SPHERE	LAC 129 M. AUSTRAL	LAC 73 RICCIOLI, NE. ORIENTAL									6	LAC 93 M. HUMOR, GASS	

HIS SION	MAG ROLL	FR, OR	PHOTO LAT.	PRIN. LAT.	PT. LONG.	ORB "	GET TIMES=HR	GMT M SEC	M-DA-YR (ESTIMATED)	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTITUDE M=NM, HI K=KM.	SCALE PRIN.	AT PT.	T AZ	I ANG.	L ANG.	T FWD.	SUN SIDE, FR. VERT	
L 4	1	179	69.525	74.07W	32	...	...	161924	5-24-67	LUNAR ORB HI. 610MM R6W	-	NONE	3592K	5888525	R6	3.6	7	...		
										CAM-NAO.= 71.385	96.22W	SWING= 246.	PHASE= 94.	EMIS-ANG.= 11.	CAM-RAD.= 5331.2 KH.	SUN AZM= 68.2				
										LAC 136 BAILLEY, KIRCHEN										
L 4	2	179	69.525	74.07W	32	...	...	161924	5-24-67	LUNAR ORB LO.F=80MM R6W	-	NONE	3592K	44900000	R6	3.6	7	...		
										CAM-NAO.= 71.385	96.22W	SWING= 246.	PHASE= 94.	EMIS-ANG.= 11.	CAM-RAD.= 5331.2 KH.	SUN AZM= 68.2				
										LAC 136 BAILLEY, K 1	W>1/2 MOON SPHERE									
L 4	1	193	63.895	85.97W	34	...	...	162428	5-25-67	LUNAR ORB HI. 610MM R6W	-	NONE	3519K	5768852	70	4.8	9	...		
										CAM-NAO.= 68.875	107.44W	SWING= 232.	PHASE= 95.	EMIS-ANG.= 15.	CAM-RAD.= 5258.2 KH.	SUN AZM= 68.6				
										LAC 135 PINGRE M. HAUSEN										

TOTAL PHOTOS IN THIS GROUP = 12

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), (O), (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAUT MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. OR	PHOTO LAT.	PRIN. LONG.	PT. N	ORB M	GET TIMES-HR	GMT M SEC	M-DA-YR (I=ESTIMATED)	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN. M=N.HI K=KM.	T I L T AZ ANG.	SUN SIDE, ANG. FWD. LAP W, R	
L 4	1	94	72.115	20.19E	18	***	160008	5-17-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3517K	5765574	103	3.2 9 -...
CAM-NAU.= 71.705 0.67W SWING= 270. PHASE= 90. EMIS-ANG.= 10. CAM-RAD.= 5256.2 KM. SUN AZM= 59.4																
LAC 138 HANZINUS, : LAC 137 NEWTON,MO : LAC 127 HOMMEL,VL : LAC 126 CLAVIUS,MAGINUS 6 LAC 144 SCOTT,S.POLE																
L 4	1	106	72.165	9.46E	20	***	160406	5-18-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3535K	5795082	104	3.4 9 -...
CAM-NAU.= 71.715 13.37W SWING= 272. PHASE= 90. EMIS-ANG.= 10. CAM-RAD.= 5274.2 KM. SUN AZM= 58.0																
LAC 137 NEWTON,MO : LAC 138 HANZINUS, : LAC 126 CLAVIUS,M : LAC 127 HOMMEL,VLACQ 6 LAC 144 SCOTT,S.POLE																
L 4	2	106	72.165	9.45E	20	***	160406	5-18-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3534K	44175000	104	3.4 9 -...
CAM-NAU.= 71.715 13.37W SWING= 272. PHASE= 90. EMIS-ANG.= 10. CAM-RAD.= 5273.2 KM. SUN AZM= 58.0																
LAC 137 NEWTON,MO : W>1/2 MOON SPHERE : LAC 129 M.AUSTRAL : LAC 131 PRANDTL PLANK 6 LAC 144 SCOTT,S.POLE																
L 4	2	113	14.635	9.51W	21	***	051900	5-19-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2718K	33975000	123	0.2 20 -...
CAM-NAU.= 14.455 9.81W SWING= 309. PHASE= 70. EMIS-ANG.= 1. CAM-RAD.= 4457.2 KM. SUN AZM= 83.9																
LAC 77 PIOLMAEUS, : W>1/2 MOON SPHERE : LAC 137 NEWTON,MO : LAC 25 CASSINI,ALPS MTS 6 LAC 42 H.SERENITY,DA																
L 4	1	118	72.495	6.99W	22	***	160805	5-19-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3555K	5827849	107	3.0 8 -...
CAM-NAU.= 71.675 20.89W SWING= 275. PHASE= 90. EMIS-ANG.= 9. CAM-RAD.= 5294.2 KM. SUN AZM= 62.0																
LAC 137 NEWTON,MO : LAC 138 HANZINUS, : LAC 126 CLAVIUS,M : LAC 144 SCOTT,S.POLE NEARSIDE > 805 6 LAC 145 S.POLE FARSI																
L 4	2	118	72.495	6.99W	22	***	160805	5-19-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3555K	44437500	107	3.0 8 -...
CAM-NAU.= 71.675 26.89W SWING= 275. PHASE= 90. EMIS-ANG.= 9. CAM-RAD.= 5294.2 KM. SUN AZM= 62.0																
LAC 137 NEWTON,MO : W>1/2 MOON SPHERE : LAC 131 PRANDTL : LAC 116 M.AUSTRAL, JENNER 6 LAC 94 PITATUS,M.NUR																
L 4	1	130	65.025	25.85W	24	***	161143	5-20-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3575K	5860656	46	4.1 9 -...
CAM-NAU.= 71.635 40.64W SWING= 211. PHASE= 91. EMIS-ANG.= 13. CAM-RAD.= 5314.2 KM. SUN AZM= 69.3																
LAC 137 NEWTON,MO : LAC 136 BAILLEY,K : LAC 126 CLAVIUS,M : LAC 125 SCHILLER,SEGNER 6 LAC 111 WILHELM,ELGE																
L 4	2	130	65.025	25.85W	24	***	161143	5-20-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3575K	44687500	46	4.1 9 -...
CAM-NAU.= 71.625 40.64W SWING= 211. PHASE= 91. EMIS-ANG.= 13. CAM-RAD.= 5314.2 KM. SUN AZM= 69.3																
LAC 137 NEWTON,MO : W>1/2 MOON SPHERE : LAC 131 PRANDTL : LAC 93 H.HUMOR,,GASSENDI 6 LAC 113 HAUROLYCUS,R																

HIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	TILT	SUN SIDE.
SION ROLL	OR	LAT.	#	TIMES-HR M SEC				SENSOR	AND FILTER	TUDE	PRIN.	AZ ANG. ANG. FWD.
"	"	MAIN	LUNG.	(ESTIMATED)				TYPE		M=N.MI	PT.	FR. LAP
		"								K=KM.	VERT	S. S
L 4 1	154	71.70S	33.51W	28	000	0000	161555	5-22-67 LUNAR ORB H1, 610MM B&W	-	NONE	3613K	5922951 105 5.2 11 -.
CAM. RAD. = 72.085 69.24W SWING = 268. PHASE = 94. EMIS. ANG. = 16. CAM. RAD. = 5352.2 KM. SUN AZH = 52.2												
LAC 137 NEWTON, HU 1 LAC 136 BAILLEY, K 1 LAC 125 SCHILLER, 1 LAC 138 MANZINUS, SCHMBGER 6 LAC 139 HELMHOLZ, HAL												
L 4 2	154	71.70S	33.52W	28	000	0000	161555	5-22-67 LUNAR ORB LD.F=80MM B&W	-	NONE	3613K	45162500 105 5.2 11 -.
CAM. RAD. = 72.075 69.24W SWING = 268. PHASE = 94. EMIS. ANG. = 16. CAM. RAD. = 5352.2 KM. SUN AZH = 52.2												
LAC 137 NEWTON, HU 1 01/4 MUONS SPHERE 1 LAC 129 M.AUSTRAL 1 LAC 74 GRIMALDI, BILLY 6 LAC 93 M. HUNOR, GASS												
L 4 2	160	42.79S	54.52W	29	000	0000	045917	5-23-67 LUNAR ORB LD.F=80MM B&W	-	NONE	3012K	37650000 99 4.8 17 -.
CAM. RAD. = 42.035 65.80W SWING = 296. PHASE = 85. EMIS. ANG. = 13. CAM. RAD. = 4751.2 KM. SUN AZH = 72.3												
LAC 110 SCHICKARD, LACKOIX 1 01/4 MUONS SPHERE 1 LAC 144 SCOTT, S. POLE NEARSTOE > 6 LAC 55 VASCODE GAMMA												
L 4 1	166	71.31S	60.23W	30	000	0000	161844	5-23-67 LUNAR ORB H1, 610MM B&W	-	NONE	3593K	5890164 101 3.4 7 -.
CAM. RAD. = 71.195 82.44W SWING = 264. PHASE = 93. EMIS. ANG. = 10. CAM. RAD. = 5332.2 KM. SUN AZH = 66.4												
LAC 136 BAILLEY, K 1 LAC 124 PHOCLIDE 1 LAC 110 SCHICKARD 1 LAC 137 NEWTON, MORETUS 6 LAC 144 SCOTT, S. POLE												

TOTAL PHOTOS IN THIS GROUP = 12

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
(-), (+), ( ), (OR) = NO INFO W = APPROXIMATELY NEXT TO MAG#, B=BRACKET MOUNTED; G= CAM. ON GROUND  
CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTRAR 2.8 LENS;  
HSB= HASSELBLAD; MAUR= MAUREN; 2P, 2B, 2S = ZEISS LENS(PLANAR, BIOGEN, SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG #	FR. OR	PHOTO OR	PHIN. LAT.	PT. LONG.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS ON SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TIDE M=N.HI K=KM.	SCALE PRIN. PT.	T I L T AZ ANG. FR. VERT	SUN SIDE, ANG. FOD. LAP N. S
L 4	1	44	72.125	69.06E	10	***	154924	5-13-67	LUNAR	ORB HI, 610MM B&W	- NONE	3498K	5734426	107	3.0 9 -..
CAM.NAD.= 71.275 50.06E SWING= 275. PHASE= 89. EMIS.ANG.= 9. CAM.RAD.= 5237.2 KM. SUN AZH= 59.6															
LAC 139 HELMHOLZ, ; LAC 129 M.AUSTRAL ; LAC 128 BIELA,WAT ; LAC 144 SCOTT,S.POLE NEARSIDE > BNS & LAC 145 S.POLE FARSI															
L 4	1	58	71.585	54.40E	12	***	155118	5-14-67	LUNAR	ORB HI, 610MM B&W	- NONE	3494K	5727869	100	2.7 9 -..
CAM.NAD.= 71.365 37.31E SWING= 269. PHASE= 89. EMIS.ANG.= 8. CAM.RAD.= 5233.2 KM. SUN AZH= 62.0															
LAC 138 HANZINUS, ; LAC 139 HELMHOLZ, ; LAC 128 BIELA,WAT ; LAC 129 M.AUSTRAL,LYOT & LAC 144 SCOTT,S.POLE															
L 4	2	58S	71.575	54.40E	12	***	155118	5-14-67	LUNAR	ORB LO.F=80MM B&W	- NONE	3494K	43675000	100	2.7 9 -..
CAM.NAD.= 71.365 37.31E SWING= 269. PHASE= 89. EMIS.ANG.= 8. CAM.RAD.= 5233.2 KM. SUN AZH= 62.0															
DEGRADED NEGATIVE ; LAC 138 HANZINUS, ; >1/2 MOON SPHERE ; LAC 141 RAYLEIGH & LAC 144 SCOTT,S.POLE															
L 4	1	70	72.655	49.06E	14	***	155335	5-15-67	LUNAR	ORB HI, 610MM B&W	- NONE	3497K	5732787	109	3.7 10 -..
CAM.NAD.= 71.565 24.60E SWING= 276. PHASE= 90. EMIS.ANG.= 11. CAM.RAD.= 5236.2 KM. SUN AZH= 55.1															
LAC 138 HANZINUS, ; LAC 139 HELMHOLZ, ; LAC 127 HOMMEL,VL ; LAC 128 BIELA,WAT & LAC 144 SCOTT,S.POLE															
L 4	2	70S	72.645	49.06E	14	***	155335	5-15-67	LUNAR	ORB LO.F=80MM B&W	- NONE	3496K	43700000	109	3.7 10 -..
CAM.NAD.= 71.565 24.60E SWING= 276. PHASE= 90. EMIS.ANG.= 11. CAM.RAD.= 5235.2 KM. SUN AZH= 55.1															
DEGRADED NEGATIVE & LAC 138 HANZINUS,SCHMBGER															
L 4	1	82	72.375	32.47E	16	***	155638	5-16-67	LUNAR	ORB HI, 610MM B&W	- NONE	3503K	5742623	106	3.1 9 -..
CAM.NAD.= 71.625 12.04E SWING= 273. PHASE= 90. EMIS.ANG.= 9. CAM.RAD.= 5242.2 KM. SUN AZH= 59.4															
LAC 138 HANZINUS,SCHMBGER ; LAC 127 HOMMEL,VLACW ; LAC 144 SCOTT,S.POLE NEARSIDE >6 LAC 145 S.POLE FARSI															
L 4	2	82	72.375	32.46E	16	***	155638	5-16-67	LUNAR	ORB LO.F=80MM B&W	- NONE	3503K	43787500	106	3.1 9 -..
CAM.NAD.= 71.625 12.04E SWING= 273. PHASE= 90. EMIS.ANG.= 9. CAM.RAD.= 5242.2 KM. SUN AZH= 59.4															
LAC 138 HANZINUS, ; >1/2 MOON SPHERE ; LAC 140 SCHRODING ; LAC 131 PRANDTL PLANK & LAC 129 M.AUSTRAL, L															
L 4	1	94	72.115	20.19E	18	***	160008	5-17-67	LUNAR	ORB HI, 610MM B&W	- NONE	3517K	5765574	103	3.2 9 -..
CAM.NAD.= 71.705 0.67W SWING= 270. PHASE= 90. EMIS.ANG.= 10. CAM.RAD.= 5256.2 KM. SUN AZH= 59.4															
LAC 138 HANZINUS, ; LAC 137 NEWTON,MO ; LAC 127 HOMMEL,VL ; LAC 126 CLAVIUS,HAGINUS & LAC 144 SCOTT,S.POLE															
L 4	2	94	72.115	20.19E	18	***	160008	5-17-67	LUNAR	ORB LO.F=80MM B&W	- NONE	3517K	43962500	103	3.2 9 -..
CAM.NAD.= 71.705 0.67W SWING= 270. PHASE= 90. EMIS.ANG.= 10. CAM.RAD.= 5256.2 KM. SUN AZH= 59.4															
LAC 138 HANZINUS, ; >1/2 MOON SPHERE ; LAC 126 CLAVIUS,H ; LAC 144 SCOTT,S.POLE NEARSIDE > BNS & LAC 145 S.POLE FARSI															



MIS SION	NAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB #	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN.	TILT AZ	SUN SIDE, ANG. ANG. FWD.		
#	#	MAIN	LONG.	(ESTIMATED)						4=N.HI K=KM.	PT. VERT	FR. LAP S. 8		
L 4	1	106	72.165	9.46E	20	000	0000	160406	5-18-67 LUNAR ORB HI. 610MM B&W	-	NONE	3535K 5795082 104 3.4 9 -.		
		CAM.NAD.=	71.715	13.37W		SWING=	272.	PHASE=	90.	EMIS.ANG.=	10.	CAM.RAD.=	5274.2 KM. SUN AZH= 58.0	
		LAC 137	NEWTUN, HU			LAC 138	MANZINUS, I					LAC 126	CLAVIUS, M I	
												LAC 127	HOMMEL, VLACQ	
												6	LAC 144	SCOTT, S. POLE
L 4	1	118	72.495	6.99W	22	000	0000	160805	5-19-67 LUNAR ORB HI. 610MM B&W	-	NONE	3555K 5827869 107 3.0 8 -.		
		CAM.NAD.=	71.675	26.89W		SWING=	275.	PHASE=	90.	EMIS.ANG.=	9.	CAM.RAD.=	5294.2 KM. SUN AZH= 62.0	
		LAC 137	NEWTUN, HU			LAC 138	MANZINUS, I					LAC 126	CLAVIUS, M I	
												LAC 144	SCOTT, S. POLE NEAR SIDE > 80S	
												6	LAC 145	S. POLE FANSI
L 4	1	154	71.705	33.51W	28	000	0000	161555	5-22-67 LUNAR ORB HI. 610MM B&W	-	NONE	3613K 5922951 105 5.2 11 -.		
		CAM.NAD.=	72.085	69.24W		SWING=	268.	PHASE=	94.	EMIS.ANG.=	16.	CAM.RAD.=	5352.2 KM. SUN AZH= 52.2	
		LAC 137	NEWTUN, HU			LAC 136	BAILLEY, K					LAC 125	SCHILLER, I	
												LAC 138	MANZINUS, SCHMBGER	
												6	LAC 139	HELMHOLTZ, HAL
L 4	1	178	33.875	82.21E	32	000	0000	132933	5-24-67 LUNAR ORB HI. 610MM B&W	-	NONE	5796K 9501639 264 5.3 2 -.		
		CAM.NAD.=	33.985	104.14E		SWING=	275.	PHASE=	112.	EMIS.ANG.=	23.	CAM.RAD.=	7535.2 KM. SUN AZH= 271.9	
		LAC 116	M. AUSTRAL, JENNER									1	LAC 63	NEPER, SCHUBERT, N. SMYTHI
												6	LAC 99	HUMBOLDT, GIBB

TOTAL PHOTOS IN THIS GROUP = 13

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT (AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), (OR) = NO INFO W = APPROXIMATELY NEXT TO MAGN. B = BRACKET MOUNTED; G = CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR = EKTAR 2.8 LENS;  
 HSB = HASSELBLAD; MAUR = MAURER; ZP, 28, 25 = ZEISS LENS (PLANAR, BIOGEN, SONAR); FOCAL LENGTH (MM) & MAX. F-OPENING  
 100 AS EXPOS. SPEED = 1/1000 (OR = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

L	4	1	5	71.505	91.31E	6	000	0000	154618	5-11-67	LUNAR ORB HI.	610MM B&W	-	NONE	3513K	5759016	100	2.4	9	-...
				MAIN	LAT.	LONG.	TIME	HR	M	SEC	(ESTIMATED)	TYPE			M=N.H1	PT.	FR.	LAP		
															K=KM.	VERT				
L	4	1	5	71.505	91.31E	6	000	0000	154618	5-11-67	LUNAR ORB HI.	610MM B&W	-	NONE	3513K	5759016	100	2.4	9	-...
				CAM-NAD.= 71.235	76.27E					SWING= 267.	PHASE= 88.	EMIS-ANG.= 7.	CAM-RAD.=	5252.2 KM.					SUN AZH= 61.8	
				LAC 139 HELMHOLZ, HALE							E-MAN AUSTRAL. PRIESTL	LAC 129 M. AUSTRAL. LYOT					6	LAC 144 SCOTT, S. POL		
L	4	1	6	71.175	91.33E	6	000	0000	154628	5-11-67	LUNAR ORB HI.	610MM B&W	-	NONE	3510K	5754098	97	2.4	9	-.90
				CAM-NAD.= 71.135	76.36E					SWING= 265.	PHASE= 88.	EMIS-ANG.= 7.	CAM-RAD.=	5249.2 KM.					SUN AZH= 61.9	
				LAC 139 HELMHOLZ, HALE								LAC 129 M. AUSTRAL. LYOT					6	LAC 144 SCOTT, S. POL		
L	4	1	8	70.495	91.35E	6	000	0000	154648	5-11-67	LUNAR ORB HI.	610MM B&W	-	NONE	3505K	5745902	92	2.4	9	-.90
				CAM-NAD.= 70.915	76.54E					SWING= 260.	PHASE= 88.	EMIS-ANG.= 7.	CAM-RAD.=	5244.2 KM.					SUN AZH= 61.9	
				LAC 139 HELMHOLZ, HALE								LAC 129 M. AUSTRAL. LYOT					6	LAC 144 SCOTT, S. POL		
L	4	2	8	70.495	91.37E	6	000	0000	154648	5-11-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3505K	43812500	92	2.4	9	-.79	
				CAM-NAD.= 70.915	76.55E					SWING= 259.	PHASE= 88.	EMIS-ANG.= 7.	CAM-RAD.=	5244.2 KM.					SUN AZH= 61.9	
				LAC 139 HELMHOLZ, HALE								LAC 142 ZEEMAN					6	LAC 129 M. AUSTRAL. LYOT		
L	4	1	323	71.405	77.79E	8	000	0000	154747	5-12-67	LUNAR ORB HI.	610MM B&W	-	NONE	3505K	5745902	98	2.3	8	-....
				CAM-NAD.= 71.245	63.03E					SWING= 266.	PHASE= 88.	EMIS-ANG.= 7.	CAM-RAD.=	5244.2 KM.					SUN AZH= 63.1	
				DEGRADED NEGATIVE								LAC 129 M. AUSTRAL					6	LAC 144 SCOTT, S. POLE		
L	4	2	323	71.405	77.79E	8	000	0000	154747	5-12-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3505K	43812500	98	2.3	8	-....	
				CAM-NAD.= 71.245	63.03E					SWING= 266.	PHASE= 88.	EMIS-ANG.= 7.	CAM-RAD.=	5244.2 KM.					SUN AZH= 63.1	
				DEGRADED NEGATIVE								6 LAC 139 HELMHOLZ, HALE								
L	4	1	44	72.125	69.06E	10	000	0000	154924	5-13-67	LUNAR ORB HI.	610MM B&W	-	NONE	3498K	5734426	107	3.0	9	-....
				CAM-NAD.= 71.275	50.06E					SWING= 275.	PHASE= 89.	EMIS-ANG.= 9.	CAM-RAD.=	5237.2 KM.					SUN AZH= 59.6	
				LAC 139 HELMHOLZ, HALE								LAC 128 BIELA, NAT					6	LAC 144 SCOTT, S. POLE NEARSIDE > 805		
L	4	2	44	72.115	69.06E	10	000	0000	154924	5-13-67	LUNAR ORB LO.F=80MM B&W	-	NONE	3498K	43725000	106	3.0	9	-....	
				CAM-NAD.= 71.275	50.06E					SWING= 275.	PHASE= 89.	EMIS-ANG.= 9.	CAM-RAD.=	5237.2 KM.					SUN AZH= 59.6	
				LAC 139 HELMHOLZ, HALE								LAC 141 RAYLEIGH					6	LAC 144 RHEITA, JANSS		
L	4	1	58	71.585	54.40E	12	000	0000	155118	5-14-67	LUNAR ORB HI.	610MM B&W	-	NONE	3494K	5727869	100	2.7	9	-....
				CAM-NAD.= 71.365	37.31E					SWING= 269.	PHASE= 89.	EMIS-ANG.= 8.	CAM-RAD.=	5233.2 KM.					SUN AZH= 62.0	
				LAC 138 HANZINUS, HALE								LAC 128 BIELA, NAT					6	LAC 144 SCOTT, S. POLE		

HIS	NO	PHOTO	PRIN.	PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	T 1	L T	SUN SIDE,			
SION	NULL	ON	LAT.	N	TIMES-HR	M SEC			SENSOR	AND FILTER	TUDE	PRIN.	A2	ANG.	ANG.	FWD.		
#	#	MAIN	LONG.		(ESTIMATED)				TYPE		M=N.MI	PT.		FR.	LAP			
											K=KH.			VERT		S. R		
L 4	1	70	72.655	49.06E	14	00	0000	155335	5-15-67 LUNAR	ORB HI. 610MM B&W	-	NONE	3497K	5732787	109	3.7 10	-...	
		CAM-NAO.=	71.56S	24.60E			SWING=	276.	PHASE=	90.	EMIS-ANG.=	13.	CAM-RAD.=	5236.2 KH.	SUN AZH=	55.1	-...	
		LAC 138 MANZINUS.					LAC 139 HELMHOLZ.		LAC 127 HOMMEL,VL						LAC 144 SCOTT,S.	POLE		
L 4	1	82	72.37S	32.47E	16	00	0000	155638	5-16-67 LUNAR	ORB HI. 610MM B&W	-	NONE	3503K	5742623	106	3.1 9	-...	
		CAM-NAO.=	71.62S	12.04E			SWING=	273.	PHASE=	90.	EMIS-ANG.=	9.	CAM-RAD.=	5242.2 KH.	SUN AZH=	59.4	-...	
		LAC 138 MANZINUS.	SCHMBGER					LAC 127 HOMMEL,VLACQ						LAC 144 SCOTT,S.	POLE NEARSIDE	>6	LAC 145 S.POLE FARS	
L 4	2	137	14.97S	35.29W	25	00	0000	052451	5-21-67 LUNAR	ORB LO.F=80MM B&W	-	NONE	2710K	33975000	119	.7 19	-...	
		CAM-NAO.=	14.46S	36.39W			SWING=	305.	PHASE=	73.	EMIS-ANG.=	2.	CAM-RAD.=	4457.2 KH.	SUN AZH=	84.1	-...	
		LAC 75 LETHBRIDGE,F					>1/2 MOON SPHERE		LAC 136 BAILLEY,K						LAC 141 RAYLEIGH			
L 4	1	154	71.70S	33.51W	28	00	0000	161555	5-22-67 LUNAR	ORB HI. 610MM B&W	-	NONE	3613K	5922951	105	5.2 11	-...	
		CAM-NAO.=	72.08S	69.24W			SWING=	268.	PHASE=	94.	EMIS-ANG.=	16.	CAM-RAD.=	5352.2 KH.	SUN AZH=	52.2	-...	
		LAC 137 HUNTON,H0					LAC 136 BAILLEY,K		LAC 125 SCHILLER.						LAC 138 MANZINUS,SCHMBGER			
L 4	1	178	33.07S	82.21E	32	00	0000	132933	5-24-67 LUNAR	ORB HI. 610MM B&W	-	NONE	5796K	9501639	264	5.3 2	-...	
		CAM-NAO.=	33.98S	104.14E			SWING=	275.	PHASE=	112.	EMIS-ANG.=	23.	CAM-RAD.=	7535.2 KH.	SUN AZH=	271.9	-...	
		LAC 116 M-AUSTRALIA,JENNER						>1/4 MOON'S SPHERE							LAC 63 NEPER,SCHUBERT,N.SMYTHI		LAC 99 HUNBOLT,GIRB	
L 4	2	193	63.88S	85.98W	34	00	0000	162428	5-25-67 LUNAR	ORB LO.F=80MM B&W	-	NONE	3519K	43987500	70	4.8 9	-...	
		CAM-NAO.=	68.07S	107.94W			SWING=	232.	PHASE=	95.	EMIS-ANG.=	15.	CAM-RAD.=	5258.2 KH.	SUN AZH=	68.6	-...	
		LAC 135 PINGRE N-HAUSEN						>1/2 MOON SPHERE							LAC 139 HELMHOLZ.		LAC 90 LOWELL	LAC 74 GRINA & LAC 127 HOMM

TOTAL PHOTOS IN THIS GROUP = 15



HIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB LONG.	GET TIMES-HR	GNT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN. M=N.MI PT. K=KM.	T 1 L T AZ ANG. ANG. FR. LAP VERT S. S	SUN SIDE, FWD.
L 4	2	59	41.755	55.05E	12	000	163122	5-14-67 LUNAR ORB LO.F=80MM B&W	- NONE	2975K 37187500	89	3.6 22 -...
CAM.NAD.= 42.115 46.79E SWING= 287. PHASE= 78. EMIS.ANG.= 10. CAM.RAD.= 4714.2 KM. SUN AZM= 68.5												
LAC 114 RHEITA, JA : >1/2 MOON SPHERE : LUNAR E. HEMISPHE : LAC 140 SCHRÖDINGER 6 LAC 62 M.UNDARUM, S.C												
L 4	2	82	72.375	32.46E	16	000	155638	5-16-67 LUNAR ORB LO.F=80MM B&W	- NONE	3503K 43787500	106	3.1 9 -...
CAM.NAD.= 71.625 12.04E SWING= 273. PHASE= 90. EMIS.ANG.= 9. CAM.RAD.= 5242.2 KM. SUN AZM= 59.4												
LAC 138 HANZINUS. : >1/2 MOON SPHERE : LAC 140 SCHRÖDING : LAC 131 PRANDTL PLANK 6 LAC 129 M.AUSTRAL, L												
L 4	2	83	42.945	32.82E	16	000	163652	5-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	2972K 37150000	98	5.1 23 -...
CAM.NAD.= 42.235 20.71E SWING= 297. PHASE= 80. EMIS.ANG.= 14. CAM.RAD.= 4711.2 KM. SUN AZM= 66.3												
LAC 113 MAURULTUS, RAB. LEVI : >1/2 MOON SPHERE : LAC 78 THEOPHILUS : LAC 116 M.AUSTRA : LAC 140 SCHR 6 LAC 60 J.CAE												
L 4	2	88	42.695	24.94E	17	000	043838	5-17-67 LUNAR ORB LO.F=80MM B&W	- NONE	2973K 37162500	96	4.6 22 -...
CAM.NAD.= 42.265 14.13E SWING= 295. PHASE= 80. EMIS.ANG.= 13. CAM.RAD.= 4712.2 KM. SUN AZM= 67.8												
LAC 113 MAURULTUS, RAB. LEVI : >1/2 MOON SPHERE : LAC 140 SCHRÖDING : LAC 129 M.AUSTRA : LAC 79 COLOM 6 LAC 60 J.CAE												
L 4	2	95	42.535	18.70E	18	000	164034	5-17-67 LUNAR ORB LO.F=80MM B&W	- NONE	2975K 37187500	95	4.7 22 -...
CAM.NAD.= 42.275 7.64E SWING= 294. PHASE= 80. EMIS.ANG.= 13. CAM.RAD.= 4714.2 KM. SUN AZM= 67.9												
LAC 113 MAURULTUS, RAB. LEVI : >1/2 MOON SPHERE : LAC 140 SCHRÖDING : LAC 129 M.AUSTRA : LAC 78 THEOP 6 LAC 112 TYCH												
L 4	2	100	42.715	12.29E	19	000	044237	5-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	2978K 37225000	96	4.8 21 -...
CAM.NAD.= 42.255 1.05E SWING= 295. PHASE= 81. EMIS.ANG.= 13. CAM.RAD.= 4717.2 KM. SUN AZM= 68.1												
LAC 113 MAURULTUS, RAB. LEVI : >1/2 MOON SPHERE : LAC 140 SCHRÖDING : LAC 129 M.AUSTRA : LAC 77 PTOLM 6 LAC 80 LANGR												
L 4	2	107	42.405	6.45E	20	000	164442	5-18-67 LUNAR ORB LO.F=80MM B&W	- NONE	2982K 37275000	94	5.0 22 -...
CAM.NAD.= 42.265 5.42W SWING= 293. PHASE= 81. EMIS.ANG.= 14. CAM.RAD.= 4721.2 KM. SUN AZM= 67.9												
LAC 112 TYCHU, STOFFER : >1/2 MOON SPHERE : LAC 59 M.VAPORUM, HYGINUS 6 LAC 79 COLOMBO, NE.M												
L 5	1	21	85.195	175.38W	3	000	171706	8-06-67 LUNAR ORB HI. 610MM B&W	- NONE	3342K 5478688	187	16.8 3 -...
CAM.NAD.= 50.725 69.07W SWING= 25. PHASE= 119. EMIS.ANG.= 58. CAM.RAD.= 5081.2 KM. SUN AZM= 343.5												
LAC 145 S.POLE FAR SIDE: AMUNDSE : >1/4 MOONS SPHERE : LAC 141 RAYLEIGH : LAC 140 SCHRÖDINGER 6 LAC 142 ZEEMAN												
L 5	2	21	85.285	168.60W	3	000	171706	8-06-67 LUNAR ORB LO.F=80MM B&W	- NONE	3341K 41762500	187	16.7 3 -...
CAM.NAD.= 50.725 69.07W SWING= 26. PHASE= 119. EMIS.ANG.= 37. CAM.RAD.= 5080.2 KM. SUN AZM= 336.7												
LAC 145 S.POLE FAR SIDE: AMUNDSEN >80 : LUNAR DISC FAR SIDE : LUNAR S. HEMISPHE : LAC 140 SCHRÖDIN : LAC 123 STEK 6 LAC 108 M.OB												

TOTAL PHOTOS IN THIS GROUP = 18

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-),(+), ( ), OR(O) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKT=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREN; ZP,ZB,ZS = ZEISS LENS; PLANAR,BIOGEN,SONAR; FOCAL LENGTH,MM, & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT D.O

MIS	MAG	FR,PHOTO	PRIN.PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI	SCALE AT	T I L T	SUN SIDE,	
SEON	ROLL	UR	LAT.	"	TIMES-HH	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG.	
"	"	MAIN	LONG.	(=ESTIMATED)				TYPE		M=N.HI	PT.	FR.	FWD.	
										K=KH.		VERT	S, S	
L 4	2	44	72.11S	69.06E	10	***	154924	5-13-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3498K	43725000	106	3.0 9 -..
		CAM.NAD.=	71.27S	50.06E		SWING=	275.	PHASE=	89.	EMIS.ANG.=	9.	CAM.RAD.=	5237.2 KH.	
		LAC 139	HELMHOLZ, I										SUN AZH= 59.6	
													6 LAC 114 RHEITA, JANSS	
L 4	2	58	71.57S	54.40E	12	***	155118	5-14-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3494K	43675000	100	2.7 9 -..
		CAM.NAD.=	71.36S	37.31E		SWING=	269.	PHASE=	84.	EMIS.ANG.=	8.	CAM.RAD.=	5233.2 KH.	
		DEGRADED NEGATIVE ;	LAC 138	MANZINUS, I									SUN AZH= 62.0	
													6 LAC 144 SCOTT, S. POLE	
L 4	2	137	14.97S	35.29W	25	***	052651	5-21-67 LUNAR ORB LO.F=80MM B&W	-	NONE	2718K	33975000	119	0.7 19 -..
		CAM.NAD.=	14.40S	36.34W		SWING=	305.	PHASE=	73.	EMIS.ANG.=	2.	CAM.RAD.=	4457.2 KH.	
		LAC 75	LETKUNNE, F										SUN AZH= 84.1	
													6 LAC 141 RAYLEIGH	
L 5	1	21	85.19S	175.38W	3	***	171706	8-06-67 LUNAR ORB HI. 610MM B&W	-	NONE	3342K	5478688	187	16.8 3 -..
		CAM.NAD.=	50.72S	69.07W		SWING=	25.	PHASE=	119.	EMIS.ANG.=	58.	CAM.RAD.=	5081.2 KH.	
		LAC 145	S. POLE FAR SIDE; AMUNDSE										SUN AZH= 343.5	
													6 LAC 142 ZEEHAN	
L 5	1	22	26.96S	112.55W	4	***	003500	8-07-67 LUNAR ORB HI. 610MM B&W	-	NONE	5106K	8370492	259	9.7 6 -..
		CAM.NAD.=	25.65S	77.04W		SWING=	91.	PHASE=	126.	EMIS.ANG.=	41.	CAM.RAD.=	6845.2 KH.	
			LAC 107	ELLEMAN									SUN AZH= 274.5	
													6 01/4 MOONS SPHERE	

TOTAL PHOTOS IN THIS GROUP = 5

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, \$ = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-1.1)1.1), ORIG) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAURER; 2P,2u,25 = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \*\* TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG KOLL	FR,PHOTO OR	PRIN.PT. LAT.	ORB #	GET TIMES-HR M SEC (ESTIMATED)	GMT M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALT TIDE	SCALE AT PRIN.	T I L T AZ	SUN SIDE, ANG. ANG. FND. FR. LAP VERT S. R
L 4	2	B	70.49S 91.37E	6	*** **** 154648	5-11-67	LUNAR ORB LO.F=80MM B&W	- NONE	3505K	43812500	92	2.4 9 -.79
CAM.NAD.= 70.91S 76.55E SWING= 259. PHASE= 88. EMIS.ANG.= 7. CAM.RAD.= 5244.2 KM. SUN AZM= 61.9												
LAC 139 HELMHOLTZ, 1 W>1/2 MOON SPHERE; LUNAR S. HEMISPHE; LAC 142 ZEEHAN & LAC 129 H.AUSTRALIA, L												
L 5	1	21*	45.19S 175.38W	3	*** **** 171706	8-06-67	LUNAR ORB HI. 610MM B&W	- NONE	3342K	5478688	187	16.8 3 -.00
CAM.NAD.= 50.72S 69.07W SWING= 25. PHASE= 119. EMIS.ANG.= 58. CAM.RAD.= 5081.2 KM. SUN AZM=343.5												
LAC 145 S.POLE FAR SIDE; AMUNDSE; W1/4 MOONS SPHERE; LAC 141 RAYLEIGH; LAC 140 SCHRÖDINGER & LAC 142 ZEEHAN												
L 5	1	22	26.96S 112.55W	4	*** **** 003500	8-07-67	LUNAR ORB HI. 610MM B&W	- NONE	5106K	8370492	259	9.7 6 -.00
CAM.NAD.= 25.65S 77.04W SWING= 91. PHASE= 126. EMIS.ANG.= 41. CAM.RAD.= 6845.2 KM. SUN AZM=274.5												
LAC 147 ELLERMAN & W1/4 MOONS SPHERE												

TOTAL PHOTOS IN THIS GROUP = 3

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES : AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (.), ( ), OR(O) = NO INFO W = APPROXIMATELY NEXT TO MAGN, R=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTAR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; HAU= HAUREN; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 100 AS EXPOS SPEED = 1/1000 (OR 0 = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR. PHOTO	PRIN. PT.	ORB	GET	GHT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE AT	TILT	SUN SIDE
SION	ROLL	OR	LAT.	N	FINES-HR	M SEC		SENSOR	AND FILTER	TUDE	PRIN.	AZ	ANG. ANG. FWD.
#	#	MAIN	LONG.		(=ESTIMATED)			TYPE		M=N.M	PT.	FR.	LAP
										K=KM.		VERT	B. X
L 4	2	173	14.76S	75.41W	31	0000	053243	5-24-67 LUNAR ORB LO.F=80MM B&W	- NONE	2724K	34050000	116	.6 15 -. 7
			CAM.NAD.= 14.37S	76.23W			SWING= 301.	PHASE= 76.	EMIS.ANG.= 1.	CAM.RAD.=	4463.2 KM.		SUN AZH= 85.1
			LAC 73 RICCIOLI,NE.ORIENTAL				: @1/2 MOON SPHERE			: LAC 143 S.HAUSEN LEGENTIL			& LAC 36 RONTGEN LORE
L 4	1	179	69.52S	74.07W	32	0000	161924	5-24-67 LUNAR ORB HI. 610MM B&W	- NONE	3592K	5888525	86	3.6 7 -. .
			CAM.NAD.= 71.38S	96.22W			SWING= 246.	PHASE= 94.	EMIS.ANG.= 11.	CAM.RAD.=	5331.2 KM.		SUN AZH= 68.2
			LAC 136 BAILLEY,KINCHER				: LAC 143 S.HAUSEN LEGENTIL			: LAC 124 PHOCYLIDES			& LAC 109 PIAZZI,V.BD
L 4	2	181	13.09S	82.19W	32	0000	173307	5-24-67 LUNAR ORB LO.F=80MM B&W	- NONE	2724K	34050000	26	.9 15 -. 1
			CAM.NAD.= 14.40S	82.86W			SWING= 212.	PHASE= 76.	EMIS.ANG.= 2.	CAM.RAD.=	4463.2 KM.		SUN AZH= 85.7
			LAC 73 RICCIOLI,NE.ORIENTAL				: @1/2 MOON SPHERE			: LAC 143 S.HAUSEN LEGENTIL			& LAC 21 N.GERARD,ROD
L 4	2	187	14.96S	69.06W	33	0000	053334	5-25-67 LUNAR ORB LO.F=80MM B&W	- NONE	2723K	34037500	145	.5 14 -. .
			CAM.NAD.= 14.36S	89.49W			SWING= 330.	PHASE= 77.	EMIS.ANG.= 1.	CAM.RAD.=	4462.2 KM.		SUN AZH= 85.4
			LAC 73 RICCIOLI,NE.ORIENTAL				: @1/2 MOON SPHERE			: LAC 143 S.HAUSEN LEGENTIL			& LAC 36 RONTGEN LORE
L 4	1	193	63.89S	85.97W	34	0000	162428	5-25-67 LUNAR ORB HI. 610MM B&W	- NONE	3519K	5768852	70	4.8 9 -. .
			CAM.NAD.= 68.87S	107.44W			SWING= 232.	PHASE= 95.	EMIS.ANG.= 15.	CAM.RAD.=	5258.2 KM.		SUN AZH= 68.6
			LAC 135 PINGRE N.HAUSEN				: LAC 124 PHOCYLIDE			: LAC 109 PIAZZI,V.			& LAC 123 STERLOV
										: LAC 143 S.HA			& LAC 136 RAIL

TOTAL PHOTOS IN THIS GROUP = 5



THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), OR (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTAR=EKTA 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAURER; ZP,ZB,ZS = ZEISS LENS(PLANAR,BIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 10R \*\* TWO ZEROS!  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO: SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

L	4	1	S	71.505	91.31E	6	***	***	154618	5-11-67	LUNAR	ORB	HI.	610MM	B&W	-	NONE	3513K	5759016	100	2.4	9	-..	SUN	SIDE.													
																										PHOTO	PRIN.	PT.	ORB	GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	TILT
																								PRIN.	AZ	ANG.	ANG.	FWD.										
																								M=N.MI	PT.	FR.	LAP											
																								K=KM.	VERT	8.	8											
L	4	1	S	71.505	91.31E	6	***	***	154618	5-11-67	LUNAR	ORB	HI.	610MM	B&W	-	NONE	3513K	5759016	100	2.4	9	-..	SUN	SIDE.													
																								CAM.RAD.=	71.235	76.27E	SWING=	267.	PHASE=	88.	EMIS.ANG.=	7.	CAM.RAD.=	5252.2	KM.	SUN	AZM=	61.8
																								LAC 139	HELMHOLZ,HALE			LAC 130	E.MAR	AUSTRALE,PRIESTL	LAC 129	M.AUSTRALE,IYOT			LAC 144	SCOTT,S.POL		
L	4	1	6	71.175	91.33E	6	***	***	154628	5-11-67	LUNAR	ORB	HI.	610MM	B&W	-	NONE	3510K	5754098	97	2.4	9	-..	SUN	SIDE.													
																								CAM.RAD.=	71.135	70.36E	SWING=	265.	PHASE=	88.	EMIS.ANG.=	7.	CAM.RAD.=	5249.2	KM.	SUN	AZM=	61.9
																								LAC 139	HELMHOLZ,HALE			LAC 129	M.AUSTRALE,LYOT			LAC 144	SCOTT,S.POL					
L	4	1	8	70.495	91.35E	6	***	***	154648	5-11-67	LUNAR	ORB	HI.	610MM	B&W	-	NONE	3505K	5745902	92	2.4	9	-..	SUN	SIDE.													
																								CAM.RAD.=	70.915	76.54E	SWING=	260.	PHASE=	88.	EMIS.ANG.=	7.	CAM.RAD.=	5244.2	KM.	SUN	AZM=	61.9
																								LAC 139	HELMHOLZ,HALE			LAC 129	M.AUSTRALE,IYOT			LAC 144	SCOTT,S.POL					
L	4	1	32*	71.405	77.79E	8	***	***	154747	5-12-67	LUNAR	ORB	HI.	610MM	B&W	-	NONE	3505K	5745902	98	2.3	8	-..	SUN	SIDE.													
																								CAM.RAD.=	71.245	63.03E	SWING=	266.	PHASE=	88.	EMIS.ANG.=	7.	CAM.RAD.=	5244.2	KM.	SUN	AZM=	63.1
																								DEGRADED NEGATIVE	LAC 139	HELMHOLZ,	LAC 129	M.AUSTRAL	LAC 128	BIELA,WATT			LAC 144	SCOTT,S.POL				
L	4	1	44	72.125	69.06E	10	***	***	154924	5-13-67	LUNAR	ORB	HI.	610MM	B&W	-	NONE	3498K	5734426	107	3.0	9	-..	SUN	SIDE.													
																								CAM.RAD.=	71.275	50.06E	SWING=	275.	PHASE=	89.	EMIS.ANG.=	9.	CAM.RAD.=	5237.2	KM.	SUN	AZM=	59.6
																								LAC 139	HELMHOLZ,	LAC 129	M.AUSTRAL	LAC 128	BIELA,WAT	LAC 144	SCOTT,S.POLE NEAR SIDE > 805			LAC 145	S.POLE FARSI			
L	4	1	58	71.505	54.40E	12	***	***	155118	5-14-67	LUNAR	ORB	HI.	610MM	B&W	-	NONE	94K	5727869	100	2.7	9	-..	SUN	SIDE.													
																								CAM.RAD.=	71.365	37.31E	SWING=	269.	PHASE=	89.	EMIS.ANG.=	8.	CAM.RAD.=	5233.2	KM.	SUN	AZM=	62.0
																								LAC 138	MANZINUS,	LAC 139	HELMHOLZ,	LAC 128	BIELA,WAT	LAC 129	M.AUSTRALE,LYOT			LAC 144	SCOTT,S.POL			
L	4	2	58*	71.575	54.40E	12	***	***	155118	5-14-67	LUNAR	ORB	LO.F=80MM	B&W	-	NONE	3494K	43675000	100	2.7	9	-..	SUN	SIDE.														
																								CAM.RAD.=	71.365	37.31E	SWING=	269.	PHASE=	89.	EMIS.ANG.=	8.	CAM.RAD.=	5233.2	KM.	SUN	AZM=	62.0
																								DEGRADED NEGATIVE	LAC 138	MANZINUS,			>1/2	MOON SPHERE	LAC 141	RAYLEIGH			LAC 144	SCOTT,S.POL		
L	4	1	70	72.655	49.36E	14	***	***	155335	5-15-67	LUNAR	ORB	HI.	610MM	B&W	-	NONE	3497K	573278	09	3.7	10	-..	SUN	SIDE.													
																								CAM.RAD.=	71.565	24.60E	SWING=	276.	PHASE=	90.	EMIS.ANG.=	11.	CAM.RAD.=	5236.2	KM.	SUN	AZM=	55.1
																								LAC 138	MANZINUS,	LAC 139	HELMHOLZ,	LAC 127	HOMMEL,VL	LAC 128	BIELA,WATT			LAC 144	SCOTT,S.POL			
L	4	2	71*	43.685	46.67E	14	***	***	163344	5-15-67	LUNAR	ORB	LO.F=80MM	B&W	-	NONE	2972K	37150000	103	5.5	24	-..	SUN	SIDE.														
																								CAM.RAD.=	42.225	33.74E	SWING=	301.	PHASE=	80.	EMIS.ANG.=	15.	CAM.RAD.=	4711.2	KM.	SUN	AZM=	64.7
																								LAC 114	RHEITA,JA	>1/2	MOON SPHERE	LAC 78	THEOPHILUS	LAC 79	COLOMBO,NE.M.NECTAR			LAC 144	SCOTT,S.POL			

MIS SION	MAG ROLL	FR,PHOTO UR	PRIN.PT. LAT.	ORB LONG.	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUDE PRIN.	T I L I AZ ANG.	SUN SIDE, ANG. FWD. LAP	
#	#	MAIN	#	#	(ESTIMATED)					M=N.HI K=KM.	PT. VER:		
L 4	2	76° 42.775	37.87E	15	***	043514	5-16-67	LUNAR ORB LO.F=80MM B&W	- NONE	2972K 37150000	97	4.5 22 -...	
		CAM.NAD.= 42.215	27.23E		SWING= 296.	PHASE= 79.	EMIS.ANG.= 12.	CAM.RAD.=	4711.2 KM.		SUN AZH= 67.2		
		LAC 114 HELLTA,JA	:		>1/2 MOON SPHERE	:	LAC 78 THEOPHILUS	:	LAC 112 TYCHO,STOFER		6	LAC 144 SCOTT,S.POLE	
L 4	1	82 72.375	32.47E	16	***	155638	5-16-67	LUNAR ORB HI. 610MM B&W	- NONE	3503K 5742623	106	3.1 9 -...	
		CAM.NAD.= 71.625	12.04E		SWING= 273.	PHASE= 90.	EMIS.ANG.= 9.	CAM.RAD.=	5242.2 KM.		SUN AZH= 59.4		
		LAC 138 MANZINUS,SCHMUGER	:		:	LAC 127 HOMMEL,VLACQ	:	LAC 144 SCOTT,S.POLE NEAR SIDE > 6			LAC 145 S.POLE FAR S		
L 4	1	94 72.115	20.19E	18	***	160008	5-17-67	LUNAR ORB HI. 610MM B&W	- NONE	3517K 5765574	103	3.2 9 -...	
		CAM.NAD.= 71.705	0.67W		SWING= 270.	PHASE= 90.	EMIS.ANG.= 10.	CAM.RAD.=	5256.2 KM.		SUN AZH= 59.4		
		LAC 138 MANZINUS, :	LAC 137 NEWTON,MO	:	:	LAC 127 HOMMEL,VL	:	LAC 126 CLAVIUS,MAGINUS			6	LAC 144 SCOTT,S.POLE	
L 4	2	94 72.115	20.19E	18	***	160008	5-17-67	LUNAR ORB LO.F=80MM B&W	- NONE	3517K 43962500	103	3.2 9 -...	
		CAM.NAD.= 71.705	0.67W		SWING= 270.	PHASE= 90.	EMIS.ANG.= 10.	CAM.RAD.=	5256.2 KM.		SUN AZH= 59.4		
		LAC 138 MANZINUS, :	>1/2 MOON SPHERE	:	:	LAC 126 CLAVIUS,M	:	LAC 144 SCOTT,S.POLE NEAR SIDE > 805			6	LAC 145 S.POLE FAR S	
L 4	1	106 72.165	9.46E	20	***	160406	5-18-67	LUNAR ORB HI. 610MM B&W	- NONE	3535K 5795082	104	3.4 9 -...	
		CAM.NAD.= 71.715	13.37W		SWING= 272.	PHASE= 90.	EMIS.ANG.= 10.	CAM.RAD.=	5274.2 KM.		SUN AZH= 58.0		
		LAC 137 NEWTON,MO	:		:	LAC 138 MANZINUS, :	LAC 126 CLAVIUS,M	:	LAC 127 HOMMEL,VLACQ		6	LAC 144 SCOTT,S.POLE	
L 4	2	106 72.165	9.45E	20	***	160406	5-18-67	LUNAR ORB LO.F=80MM B&W	- NONE	3534K 44175000	104	3.4 9 -...	
		CAM.NAD.= 71.715	13.37W		SWING= 272.	PHASE= 90.	EMIS.ANG.= 10.	CAM.RAD.=	5273.2 KM.		SUN AZH= 58.0		
		LAC 137 NEWTON,MO	:		>1/2 MOON SPHERE	:	LAC 129 MAUSTRAL	:	LAC 131 PRANDTL PLANK		6	LAC 144 SCOTT,S.POLE	
L 4	2	112 42.575	1.35W	21	***	044650	5-19-67	LUNAR ORB LO.F=80MM B&W	- NONE	2986K 37325000	95	4.6 20 -...	
		CAM.NAD.= 42.265	12.09W		SWING= 294.	PHASE= 81.	EMIS.ANG.= 13.	CAM.RAD.=	4725.2 KM.		SUN AZH= 69.2		
		LAC 112 TYCHO,STOFER	:		>1/2 MOON SPHERE	:	:	LAC 144 SCOTT,S.POLE NEAR SIDE > 6			LAC 76 RHPAEUS MT.		
L 4	1	118 72.495	6.99W	22	***	160805	5-19-67	LUNAR ORB HI. 610MM B&W	- NONE	3555K 5827869	107	3.0 8 -...	
		CAM.NAD.= 71.675	26.89W		SWING= 275.	PHASE= 90.	EMIS.ANG.= 9.	CAM.RAD.=	5294.2 KM.		SUN AZH= 62.0		
		LAC 137 NEWTON,MO	:		:	LAC 138 MANZINUS, :	LAC 126 CLAVIUS,M	:	LAC 144 SCOTT,S.POLE NEAR SIDE > 805		6	LAC 145 S.POLE FAR S	
L 4	2	118 72.495	6.99W	22	***	160805	5-19-67	LUNAR ORB LO.F=80MM B&W	- NONE	3555K 44437500	107	3.0 8 -...	
		CAM.NAD.= 71.675	26.89W		SWING= 275.	PHASE= 90.	EMIS.ANG.= 9.	CAM.RAD.=	5294.2 KM.		SUN AZH= 62.0		
		LAC 137 NEWTON,MO	:		>1/2 MOON SPHERE	:	LAC 131 PRANDTL	:	LAC 116 MAUSTRAL, JENNER		6	LAC 94 PITATUS,M.NUR	
L 4	2	119 42.785	7.44W	22	***	164855	5-19-67	LUNAR ORB LO.F=80MM B&W	- NONE	2991K 37387500	97	4.8 20 -...	
		CAM.NAD.= 42.265	18.74W		SWING= 295.	PHASE= 82.	EMIS.ANG.= 13.	CAM.RAD.=	4730.2 KM.		SUN AZH= 69.1		
		LAC 112 TYCHO,STOFER	:		>1/2 MOON SPHERE	:	:	LAC 144 SCOTT,S.POLE NEAR SIDE > 6			LAC 58 COPERNICUS,R		
L 4	2	124 43.005	14.08W	23	***	045059	5-20-67	LUNAR ORB LO.F=80MM B&W	- NONE	2994K 37425000	99	4.8 20 -...	
		CAM.NAD.= 42.205	25.42W		SWING= 297.	PHASE= 82.	EMIS.ANG.= 13.	CAM.RAD.=	4733.2 KM.		SUN AZH= 69.4		
		LAC 111 WILHELM,E	:		>1/2 MOON SPHERE	:	LAC 94 PITATUS,M.	:	LAC 77 PIOLMAEUS,KLEIN		6	LAC 144 SCOTT,S.POLE	
L 4	1	130 65.025	25.85W	24	***	161143	5-20-67	LUNAR ORB HI. 610MM B&W	- NONE	3575K 5860656	46	4.1 9 -...	
		CAM.NAD.= 71.635	40.69W		SWING= 211.	PHASE= 91.	EMIS.ANG.= 13.	CAM.RAD.=	5314.2 KM.		SUN AZH= 69.3		
		LAC 137 NEWTON,MO	:		:	LAC 136 BAILLEY,K	:	LAC 126 CLAVIUS,M	:	LAC 125 SCHILLER,SEGNER		6	LAC 111 WILHELM,ELGE

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MIS SION	MAG ROLL	FR. LAT.	PHOTO LAT.	PRIN. LAT.	PT. LAT.	ORB LAT.	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUBE	SCALE PRIN. M=N.MI PT. K=KM.	T I L T AZ	SUN SIDE, ANG. FR. VERT	SIDE, ANG. LAP S. R
L 4	2	131	36.50S	23.47W	24	***	165252	5-20-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	2999K 37487500	52	5.0 20	-.62
		CAM.NAD.= 42.26S		32.12W		SWING= 251.		PHASE= 83.		EMIS.ANG.= 14.		CAM.RAD.= 4738.2 KM.		SUN AZM= 74.0		
		LAC 111 WILHELM,ELGER,MEE						; >1/2 MOON SPHERE				LAC 144 SCOTT,S.POLF NEAR SIDE > 6		LAC 57 KEPLER,ENCKE		
L 4	2	136	42.64S	27.40W	25	***	045435	5-21-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3003K 37537500	97	4.8 19	-.00
		CAM.NAD.= 42.16S		38.84W		SWING= 295.		PHASE= 83.		EMIS.ANG.= 13.		CAM.RAD.= 4742.2 KM.		SUN AZM= 70.3		
		LAC 111 WILHELM,ELGER,MEE						; >1/2 MOON SPHERE				LAC 144 SCOTT,S.POLF NEAR SIDE > 6		LAC 57 KEPLER,ENCKE		
L 4	2	142	42.04S	33.37W	26	***	165605	5-21-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3007K 37587500	93	5.2 20	-.00
		CAM.NAD.= 42.14S		45.58W		SWING= 291.		PHASE= 84.		EMIS.ANG.= 14.		CAM.RAD.= 4746.2 KM.		SUN AZM= 0.4		
		LAC 111 WILHELM,ELGER,MEE						; >1/2 MOON SPHERE				LAC 144 SCOTT,S.POLF NEAR SIDE > 6		LAC 56 HEVELIUS,REI		
L 4	2	148	42.94S	41.38W	27	***	045772	5-22-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3009K 37612500	99	4.6 18	-.00
		CAM.NAD.= 42.11S		52.33W		SWING= 297.		PHASE= 84.		EMIS.ANG.= 13.		CAM.RAD.= 4748.2 KM.		SUN AZM= 71.6		
		LAC 110 SCHICKARD,LACROIX						; >1/2 MOON SPHERE				LAC 144 SCOTT,S.POLF NEAR SIDE > 6		LAC 56 HEVELIUS,REI		
L 4	1	154	71.7LS	33.51W	28	***	161555	5-22-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3613K 5922951	105	5.2 11	-.00
		CAM.NAD.= 72.08S		69.24W		SWING= 268.		PHASE= 94.		EMIS.ANG.= 16.		CAM.RAD.= 5352.2 KM.		SUN AZM= 52.2		
		LAC 137 NEWTON,HU ; LAC 136 BAILLEY,K ; LAC 125 SCHILLER. ; LAC 138 MANZINUS,SCHMÖGER												6 LAC 139 HELMHOLTZ,HAL		
L 4	2	155	42.40S	48.89W	28	***	165427	5-22-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3011K 37637500	95	4.3 17	-.00
		CAM.NAD.= 42.07S		59.07W		SWING= 293.		PHASE= 84.		EMIS.ANG.= 12.		CAM.RAD.= 4750.2 KM.		SUN AZM= 72.8		
		LAC 110 SCHICKARD,LACROIX						; >1/2 MOON SPHERE				LAC 144 SCOTT,S.POLF NEAR SIDE > 6		LAC 56 HEVELIUS,REI		
L 4	2	160	42.79S	54.52W	29	***	045917	5-23-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3012K 37650000	99	4.8 17	-.00
		CAM.NAD.= 42.03S		65.80W		SWING= 296.		PHASE= 85.		EMIS.ANG.= 13.		CAM.RAD.= 4751.2 KM.		SUN AZM= 72.3		
		LAC 110 SCHICKARD,LACROIX						; >1/4 MOONS SPHERE				LAC 144 SCOTT,S.POLF NEAR SIDE > 6		LAC 55 VASCODEGAMA		
L 4	1	166	71.31S	66.23W	30	***	161844	5-23-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3593K 5890164	101	3.4 7	-.00
		CAM.NAD.= 71.19S		62.44W		SWING= 264.		PHASE= 93.		EMIS.ANG.= 10.		CAM.RAD.= 5332.2 KM.		SUN AZM= 66.4		
		LAC 136 BAILLEY,K ; LAC 124 PHOCLIDE ; LAC 110 SCHICKARD ; LAC 137 NEWTON,MORETUS												6 LAC 144 SCOTT,S.POLF		
L 4	2	167	42.01S	60.70W	30	***	170012	5-23-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3009K 37612500	95	5.0 17	-.00
		CAM.NAD.= 41.02S		72.48W		SWING= 292.		PHASE= 86.		EMIS.ANG.= 14.		CAM.RAD.= 4748.2 KM.		SUN AZM= 72.6		
		LAC 110 SCHICKARD,LACROIX						; >1/2 MOON SPHERE				LAC 144 SCOTT,S.POLF NEAR SIDE > 6		LAC 55 VASCODEGAMA		
L 4	2	172	42.43S	67.94W	31	***	050029	5-24-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3011K 37637500	100	4.8 16	-.00
		CAM.NAD.= 41.96S		79.20W		SWING= 297.		PHASE= 86.		EMIS.ANG.= 13.		CAM.RAD.= 4750.2 KM.		SUN AZM= 73.1		
		LAC 109 PIAZZI,V.BOUVARD						; >1/2 MOON SPHERE				LAC 144 SCOTT,S.POLF NEAR SIDE > 6		LAC 72 ELVEY NOREL		
L 4	1	179	69.52S	74.07W	32	***	161924	5-24-67	LUNAR	ORB HI. 610MM B&W	-	NONE	3592K 5880525	86	3.6 7	-.00
		CAM.NAD.= 71.38S		96.22W		SWING= 246.		PHASE= 94.		EMIS.ANG.= 11.		CAM.RAD.= 5331.2 KM.		SUN AZM= 68.2		
		LAC 136 BAILLEY,KIRCHER						; LAC 143 S.HAUSEN LEGENTIL ; LAC 124 PHOCLIDES						6 LAC 109 PIAZZI,V.HO		
L 4	2	180	46.83S	75.23W	32	***	170054	5-24-67	LUNAR	ORB LO.F=80MM B&W	-	NONE	3009K 37612500	85	4.6 16	-.00
		CAM.NAD.= 41.99S		85.86W		SWING= 283.		PHASE= 87.		EMIS.ANG.= 13.		CAM.RAD.= 4748.2 KM.		SUN AZM= 74.6		
		LAC 109 PIAZZI,V.BOUVARD						; >1/2 MOON SPHERE				LAC 144 SCOTT,S.POLF NEAR SIDE > 6		LAC 72 ELVEY NOREL		

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LAC 144 SCOTT,S.POLE NEAR SIDE &gt; 005

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MIS MAG		FR, PHOTO		PRIN, PT. ORB		GET	GMT	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALTI SCALE AT	T I L T	SUN SIDE,				
SION ROLL		OR		LAT.		#	TIMES-HR M SEC		SENSOR	AND FILTER	TUDE	PRIN.	A7	ANG. ANG.	FWD.		
#	#	MAIN		LONG.		(!=ESTIMATED)			TYPE		M=N,NI	PT.	FR.	LAP			
											K=KM.		VERT	R. R			
L 4	2	186	42.26S	81.34W	33	***	050123	5-25-67	LUNAR ORB	LO.F=80MM B&W	-	NONE	3006K	37575000	95	4.7 14	-.
		CAM.NAD.=		41.96S 92.40W		SWING= 293.		PHASE= 87.		EMIS.ANG.= 13.		CAM.RAD.=		4745.2 KM.		SUN A7M= 74.2	
		LAC 109 PIAZZI,V.BOUVARD						; Q>1/2 MOON SPHERE								; LAC 144 SCOTT,S.POLE NEAR SIDE >6 LAC 72 ELVEY NOBEL	

TOTAL PHOTOS IN THIS GROUP = 34

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS,  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT(AZ) & VERTICAL TO CAMERA AXIS  
 (-1,0),(1,0) OR (U) = NO INFO W = APPROXIMATELY NEXT TO MAGN, B=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB=HASSELBLAD; MAUR=MAUREK; ZP,ZB,ZS = ZEISS LENS(PLANAR,RIOGEN,SONAR); FOCAL LENGTH(MM) & MAX.F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZERO)  
 FOR LUNAR ORBITER & AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1,XXX ON ORIG.NEG. AT PP IF ALT NOT 0.0

MIS	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GHI	M-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T I L T	SUN	SIDE,	
SION	ROLL	OK	LAT.	LONG.	"	TIMES-HR	M SEC			SENSOR	AND FILTER	TUDE	PRIN.		AZ	ANG.	FWD.	
"	"	MAIN				(ESTIMATED)				TYPE		M=N.MI K=KM.	PT.		FR.	LAP		
															VERT		R, R	
L 4	1	5	71.50S	91.31E	6	000	000	154618	5-11-67	LUNAR ORB HI. 610MM B6W	-	NONE	3513K	5759016	100	2.4	9	-00
		CAM-NAO.=	71.235	76.27E				SWING= 267.		PHASE= 88.	EMIS.ANG.= 7.	CAM-RAD.=	5252.2	KM.		SUN AZH= 61.8		
		LAC 139	HELMHOLZ,HALE							LAC 130 E-MAR AUSTRAL, PRIESTL;						LAC 144	SCOTT, S. POLE	
L 4	1	6	71.17S	91.33E	6	000	000	154628	5-11-67	LUNAR ORB HI. 610MM B6W	-	NONE	3510K	5754098	97	2.4	9	-90
		CAM-NAO.=	71.135	76.36E				SWING= 265.		PHASE= 88.	EMIS.ANG.= 7.	CAM-RAD.=	5249.2	KM.		SUN AZH= 61.9		
		LAC 139	HELMHOLZ,HALE							LAC 129 H.AUSTRAL, LYOT						LAC 144	SCOTT, S. POLE	
L 4	1	8	70.49S	91.35E	6	000	000	154648	5-11-67	LUNAR ORB HI. 610MM B6W	-	NONE	3505K	5745902	92	2.4	9	-90
		CAM-NAO.=	70.41S	76.54E				SWING= 260.		PHASE= 88.	EMIS.ANG.= 7.	CAM-RAD.=	5244.2	KM.		SUN AZH= 61.9		
		LAC 139	HELMHOLZ,HALE							LAC 129 H.AUSTRAL, LYOT						LAC 144	SCOTT, S. POLE	
L 4	1	32	71.40S	77.79E	8	000	000	154747	5-12-67	LUNAR ORB HI. 610MM B6W	-	NONE	3505K	5745902	98	2.3	8	-00
		CAM-NAO.=	71.24S	63.03E				SWING= 266.		PHASE= 88.	EMIS.ANG.= 7.	CAM-RAD.=	5244.2	KM.		SUN AZH= 63.1		
		DEGRADED	NEGATIVE							LAC 139 HELMHOLZ, ; LAC 129 H.AUSTRAL ; LAC 128 BIELA, WATT						LAC 144	SCOTT, S. POLE	
L 4	1	44	72.12S	69.06E	10	000	000	154924	5-13-67	LUNAR ORB HI. 610MM B6W	-	NONE	3498K	5734426	107	3.0	9	-00
		CAM-NAO.=	71.27S	50.06E				SWING= 275.		PHASE= 89.	EMIS.ANG.= 9.	CAM-RAD.=	5237.2	KM.		SUN AZH= 59.6		
		LAC 139	HELMHOLZ, ;							LAC 129 H.AUSTRAL ; LAC 128 BIELA, WAT ; LAC 144 SCOTT, S. POLE NEAR SIDE > 805						LAC 145	S-POLE FAR SIDE	
L 4	1	58	71.58S	54.40E	12	000	000	155118	5-14-67	LUNAR ORB HI. 610MM B6W	-	NONE	3494K	5727849	100	2.7	9	-00
		CAM-NAO.=	71.36S	37.31E				SWING= 269.		PHASE= 89.	EMIS.ANG.= 8.	CAM-RAD.=	5233.2	KM.		SUN AZH= 62.0		
		LAC 138	MANZINUS, ;							LAC 139 HELMHOLZ, ; LAC 128 BIELA, WAT ; LAC 129 H.AUSTRAL, LYOT						LAC 144	SCOTT, S. POLE	
L 4	1	70	72.05S	49.06E	14	000	000	155335	5-15-67	LUNAR ORB HI. 610MM B6W	-	NONE	3497K	5732787	109	3.7	10	-00
		CAM-NAO.=	71.56S	24.60E				SWING= 276.		PHASE= 90.	EMIS.ANG.= 11.	CAM-RAD.=	5236.2	KM.		SUN AZH= 55.1		
		LAC 138	MANZINUS, ;							LAC 139 HELMHOLZ, ; LAC 127 HOMMEL, VL ; LAC 128 BIELA, WATT						LAC 144	SCOTT, S. POLE	
L 4	1	82	72.37S	32.41E	16	000	000	155638	5-16-67	LUNAR ORB HI. 610MM B6W	-	NONE	3503K	5742623	106	3.1	9	-00
		CAM-NAO.=	71.02S	12.04E				SWING= 273.		PHASE= 90.	EMIS.ANG.= 9.	CAM-RAD.=	5242.2	KM.		SUN AZH= 59.4		
		LAC 138	MANZINUS, SCHMUGER							LAC 127 HOMMEL, VLACQ ; LAC 144 SCOTT, S. POLE NEAR SIDE > 805						LAC 145	S-POLE FAR SIDE	
L 4	1	94	72.11S	20.19E	18	000	000	160008	5-17-67	LUNAR ORB HI. 610MM B6W	-	NONE	3517K	5765574	103	3.2	9	-00
		CAM-NAO.=	71.76S	0.67W				SWING= 270.		PHASE= 90.	EMIS.ANG.= 10.	CAM-RAD.=	5256.2	KM.		SUN AZH= 59.4		
		LAC 138	MANZINUS, ;							LAC 137 NEWTON, MU ; LAC 127 HOMMEL, VL ; LAC 126 CLAVIUS, MAGINUS						LAC 144	SCOTT, S. POLE	

MISSION	ROLL	OR	LAT.	N	LONG.	GET	GHT	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI SCALE AT TUBE	PRIN.	PT.	1 L T	SUN SIDE, ANG. FWD.
N	N	MAIN				(ESTIMATED)					N=N.HI K=KM.			FR.	LAP
L 4	2	94	72.11S	20.19E	18	***	****	160008	5-17-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3517K	43962500	1n3	3.2 9 -...
CAM.NAD.= 71.70S 0.67W SWING= 270. PHASE= 90. EMIS.ANG.= 10. CAM.RAD.= 5256.2 KM. SUN AZH= 59.4															
LAC 138 MANZINUS, ; W>1/2 MOON SPHERE ; LAC 126 CLAVIUS,M ; LAC 144 SCOTT,S.POLE NEAR SIDE > 80S & LAC 145 S.POLE FARSI															
L 4	1	106	72.16S	9.46E	20	***	****	160406	5-18-67 LUNAR ORB HI. 610MM B&W	-	NONE	3535K	5795082	104	3.4 9 -...
CAM.NAD.= 71.71S 13.37W SWING= 272. PHASE= 90. EMIS.ANG.= 10. CAM.RAD.= 5274.2 KM. SUN AZH= 58.0															
LAC 137 NEWTON,MU ; LAC 138 MANZINUS, ; LAC 126 CLAVIUS,M ; LAC 127 HOMMEL,V.LACW & LAC 144 SCOTT,S.POLE															
L 4	1	118	72.49S	6.99W	22	***	****	160805	5-19-67 LUNAR ORB HI. 610MM B&W	-	NONE	3555K	5827869	107	3.0 8 -...
CAM.NAD.= 71.67S 26.89W SWING= 275. PHASE= 90. EMIS.ANG.= 9. CAM.RAD.= 5294.2 KM. SUN AZH= 62.0															
LAC 137 NEWTON,MU ; LAC 138 MANZINUS, ; LAC 126 CLAVIUS,M ; LAC 144 SCOTT,S.POLE NEAR SIDE > 80S & LAC 145 S.POLE FARSI															
L 4	1	166	71.31S	60.23W	30	***	****	161844	5-23-67 LUNAR ORB HI. 610MM B&W	-	NONE	3593K	5890164	101	3.4 7 -...
CAM.NAD.= 71.19S 82.44W SWING= 264. PHASE= 93. EMIS.ANG.= 10. CAM.NAD.= 5332.2 KM. SUN AZH= 66.4															
LAC 136 BAILLEY,K ; LAC 124 PHO CYLIDE ; LAC 110 SCHICKARD ; LAC 137 NEWTON,MORETUS & LAC 144 SCOTT,S.POLE															
L 4	1	179	69.52S	74.07W	32	***	****	161924	5-24-67 LUNAR ORB HI. 610MM B&W	-	NONE	3592K	5888525	86	3.6 7 -...
CAM.NAD.= 71.38S 96.22W SWING= 246. PHASE= 94. EMIS.ANG.= 11. CAM.RAD.= 5331.2 KM. SUN AZH= 68.2															
LAC 136 BAILLEY,KIRCHER ; LAC 143 S.HAUSEN LEGENTIL ; LAC 124 PHO CYLIDES & LAC 109 PIAZZI,V.RO															
L 5	1	21	85.19S	175.38W	3	***	****	171706	8-06-67 LUNAR ORB HI. 610MM B&W	-	NONE	3342K	5478688	187	16.8 3 -...
CAM.NAD.= 50.72S 69.07W SWING= 25. PHASE= 119. EMIS.ANG.= 58. CAM.RAD.= 5081.2 KM. SUN AZH= 343.5															
LAC 145 S.POLE FAR SIDE:AMUNDSE ; W1/4 MOONS SPHERE ; LAC 141 RAYLEIGH ; LAC 140 SCHRODINGER & LAC 142 ZEEMAN															
L 5	2	21	85.28S	168.60W	3	***	****	171706	8-06-67 LUNAR ORB LO.F=80MM B&W	-	NONE	3341K	41762500	187	16.7 3 -...
CAM.NAD.= 50.72S 69.07W SWING= 26. PHASE= 119. EMIS.ANG.= 57. CAM.RAD.= 5080.2 KM. SUN AZH= 336.7															
LAC 145 S.POLE FAR SIDE:AMUNDSEN >80 ; LUNAR DISC FAR SID ; LUNAR S. HEMISPHE ; LAC 140 SCHRODIN ; LAC 123 STEK & LAC 108 H.O.R															

TOTAL PHOTOS IN THIS GROUP = 16

THESE TWO SYMBOLS NEXT TO MAIN OR PHOTO NUMBER MEAN: \* = DEGRADED PHOTOS, S = ALMOST UNUSABLE PHOTOS.  
 TILT ANGLES: AZIMUTH OF DIRECTION OF TILT (AZ) & VERTICAL TO CAMERA AXIS  
 (-), (+), ( ), (0) = NO INFO W = APPROXIMATELY NEXT TO MAGN., R=BRACKET MOUNTED; G= CAM. ON GROUND  
 CAMERA-LENS AS FOLLOWS: SW.A. = SUPER WIDE ANGLE LENS; EKTR=EKTAR 2.8 LENS;  
 HSB= HASSELBLAD; MAUR= MAUREN; 2P, 28, 25 = ZEISS LENS (PLANAR, BIDGEN, SONAR); FOCAL LENGTH (MM) & MAX. F-OPENING  
 10\* AS EXPOS SPEED = 1/1000 (OR \* = TWO ZEROS)  
 FOR LUNAR ORBITER K AFTER ALTITUDE EQUALS KILOMETERS  
 COLUMN HEADINGS APPLY TO FIRST DATA LINE OF EACH PHOTO; SCALE IS THE XXX OF 1/XXX ON ORIG. NEG. AT PP IF ALT NOT 0.0

MIS SION	MAG ROLL	FR. PHOTO OR	PRIN. PT. LAT.	ORB N	GET TIMES-HR	GMT M SEC	M-DA-YR	CAMERA-LENS OR SENSOR TYPE	FILM-EXPOSURE AND FILTER	ALTI TUDE	SCALE AT PRIN.	T I L T	SUN SIDE, ANG. ANG. FWD.
#	#	MAIN	LONG.	(=ESTIMATED)						M=N.MI K=KM.	PT.	FR. VERT	LAP R. R
L 4	2	21	42.98N	98.82E	6	000	180334	5-11-67 LUNAR ORB LO.F=80MM B&W	- NONE	2979K	37237500	86	1.8 27 -..
CAM.NAD.= 42.88N 94.55E SWING= 249. PHASE= 67. EMIS.ANG.= 5. CAM.RAD.= 4718.2 KM. SUN AZH=117.8													
LAC 29 DRUHU FABR : >1/2 MOON SPHERE : LAC 81 ANSGARIUS : LAC 146 N. POLE FAR SIDE: NANSEN, #3 >80N 6 LAC 64 NE. SHYTHI HE													
L 4	1	423	70.09N	84.08E	9	000	064506	5-13-67 LUNAR ORB HI. 610MM B&W	- NONE	3494K	5727869	108	.8 14 -.90
CAM.NAD.= 71.60N 84.75E SWING= 357. PHASE= 78. EMIS.ANG.= 2. CAM.RAD.= 5233.2 KM. SUN AZH=130.1													
DEGRADED NEGATIVE : LAC 5 PETERMANN, : LAC 6 : LAC 15 M. HUMBOLDTIANUM 6 LAC 1 N. POLE NEAR SID													
L 4	1	56	70.35N	68.44E	11	000	064639	5-14-67 LUNAR ORB HI. 610MM B&W	- NONE	3495K	5729508	214	.8 13 -.90
CAM.NAD.= 71.63N 71.06E SWING= 25. PHASE= 78. EMIS.ANG.= 2. CAM.RAD.= 5234.2 KM. SUN AZH=126.8													
LAC 5 PETERMANN, : LAC 4 METON, DESIT : LAC 14 ENDYMION, S : LAC 15 M. HUMBOLDTIANUM 6 LAC 1 N. POLE NEAR SID													
L 4	1	68	70.93N	53.66E	13	000	064827	5-15-67 LUNAR ORB HI. 610MM B&W	- NONE	3488K	5718033	239	.7 12 -.70
CAM.NAD.= 71.63N 57.12E SWING= 50. PHASE= 78. EMIS.ANG.= 2. CAM.RAD.= 5227.2 KM. SUN AZH=124.4													
LAC 4 METON, DESIT : LAC 5 PETERMANN, : LAC 14 ENDYMION, S : LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N 6 LAC 146 N. POLE FAR SI													
L 4	2	743	40.70N	45.57E	14	000	181008	5-15-67 LUNAR ORB LO.F=80MM B&W	- NONE	2970K	37125000	119	2.3 25 -..
CAM.NAD.= 42.75N 41.06E SWING= 283. PHASE= 71. EMIS.ANG.= 6. CAM.RAD.= 4709.2 KM. SUN AZH=113.2													
DEGRADED NEGATIVE : LAC 27 GEMINUS, AT : >1/2 MOON SPHERE : LAC 146 N. POLE FAR SIDE: NANSEN, #3 >80N 6 LAC 114 RHEITA, JANSS													
L 4	1	80	70.45N	46.09E	15	000	065107	5-16-67 LUNAR ORB HI. 610MM B&W	- NONE	3479K	5703279	147	.8 13 -.3
CAM.NAD.= 71.89N 43.34E SWING= 323. PHASE= 79. EMIS.ANG.= 3. CAM.RAD.= 5218.2 KM. SUN AZH=128.9													
LAC 4 METON, DESIT : LAC 5 PETERMANN, : LAC 13 ARISTOTE., : LAC 14 ENDYMION, STRABO 6 LAC 1 N. POLE NEAR SID													
L 4	1	104	70.35N	18.10E	19	000	065708	5-18-67 LUNAR ORB HI. 610MM B&W	- NONE	3428K	561967.	153	.9 12 -.1
CAM.NAD.= 71.87N 15.88E SWING= 330. PHASE= 80. EMIS.ANG.= 3. CAM.RAD.= 5167.2 KM. SUN AZH=125.4													
LAC 4 METON, DESIT : LAC 3 PHILOLAUS, B : LAC 13 ARISTOTE., : LAC 12 PLATO, ALPINE VAL. 6 LAC 1 N. POLE NEAR SID													
L 4	1	116	70.80N	4.49E	21	000	070041	5-19-67 LUNAR ORB HI. 610MM B&W	- NONE	3397K	5568852	148	.6 12 -.6
CAM.NAD.= 71.88N 2.48E SWING= 326. PHASE= 80. EMIS.ANG.= 2. CAM.RAD.= 5136.2 KM. SUN AZH=124.1													
LAC 3 PHILOLAUS, B : LAC 4 METON, DESIT : LAC 12 PLATO, ALPI : LAC 13 ARISTOTE., M. FRIG 6 LAC 1 N. POLE NEAR SID													
L 4	2	127	41.21N	14.29W	23	000	062610	5-20-67 LUNAR ORB LO.F=80MM B&W	- NONE	2886K	34075000	114	2.2 22 -.29
CAM.NAD.= 42.81N 18.79W SWING= 278. PHASE= 74. EMIS.ANG.= 6. CAM.RAD.= 4625.2 KM. SUN AZH=109.6													
LAC 24 SINUS IRID : >1/2 MOON SPHERE : LAC 76 RIPHAUS M : LAC 1 N. POLE NEAR SIDE BYRD, PEARY >80 N 6 LAC 146 N. POLE FAR SI													

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LAC 146 N. POLE FAN SIDE, HANSEN, #3 &gt; HUN

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SUN	ROLL	#	MAG	FR.	PHOTO	PRIN.	PT.	ORB	GET	GMT	H-DA-YR	CAMERA-LENS OR	FILM-EXPOSURE	ALT	SCALE	AT	T	I	L	T	SUN	SIDE
#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
L 4	1	152	69.78N	29.61W	27	000	0000	071044	5-22-67	LUNAR	ORB	FI. 610MM B&W	-	NONE	3145K	5483607	142	1.5	13	-15		
			CAM. RAD. = 72.22N	34.79W				SWING = 321.		PHASE = 81.	EMIS. ANG. = 4.		CAM. RAD. = 5084.2 KM.							SUN AZM = 126.4		
			LAC 3 PHILOLAUS, BARROW																	LAC 1 N. POLE NEARST		
L 4	1	164	70.19N	41.50W	29	000	0000	071247	5-23-67	LUNAR	ORB	FI. 610MM B&W	-	NONE	3346K	5485246	136	1.4	13	-16		
			CAM. RAD. = 72.26N	47.11W				SWING = 313.		PHASE = 81.	EMIS. ANG. = 4.		CAM. RAD. = 5085.2 KM.							SUN AZM = 126.8		
			LAC 2 ANAXIMENES, PASCAL																	LAC 10 BABBAGE, N. PROCELARM.		
																				LAC 11 J. HERSCHEL, J		
L 4	1	176	69.97N	54.78W	31	000	0000	071413	5-24-67	LUNAR	ORB	FI. 610MM B&W	-	NONE	3354K	5498361	142	1.5	13	-18		
			CAM. RAD. = 72.28N	59.77W				SWING = 320.		PHASE = 81.	EMIS. ANG. = 4.		CAM. RAD. = 5093.2 KM.							SUN AZM = 125.7		
			LAC 2 ANAXIMENES, PASCAL																	LAC 10 BABBAGE, N. PROCELARM.		
																				LAC 11 J. HERSCHEL, J		
L 4	1	190	70.34N	63.47W	33	000	0000	071553	5-25-67	LUNAR	ORB	FI. 610MM B&W	-	NONE	3373K	5529508	125	1.9	14	-48		
			CAM. RAD. = 72.71N	72.45W				SWING = 306.		PHASE = 82.	EMIS. ANG. = 6.		CAM. RAD. = 5112.2 KM.							SUN AZM = 129.2		
			LAC 2 ANAXIMENES, PASCAL																	LAC 10 BABBAGE, N. PROCELARM.		
																				LAC 3 PHILOLAUS, BARROW		
																				LAC 9 CREMONA		

TOTAL PHOTOS IN THIS GROUP = 13

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